46

WPP 001/4 VWW 1,6 V 9 1.Edition

n

VE 4/9 F 2400 R 138 0 460 494 131

supersedes Company: VWW engine: 086

Overflow temperature 45° C

All test specifications are valid only for Bosch Fuel-spection Pump Test Benches and Finters

Test Instructions and Test Equipment

see VDT-W-460/...

Testoil-ISO 4113

1. Settings	Rot. speed rev/min			Charge-air press. bar (kgf/cm²)	Difference in delivery cm ³
1.1 Timing device travel	1500	2,9 - 3,3	mn:		
1.2 Supply pump pressure	1500	4,9 - 5,5	bar (kgf/cm²)		
1.3 Full-load delivery without charge air pressure Full-load delivery with	1500	33,0 -34,0	cm ³ /1000 strokes cm ³ /1000 strokes		2,5
charge-air pressure 1.4 Idle speed ingulation	475	6,0 -10,0	cm ³ /1000 strokes		2,0
1 5 Start	<i>s</i> 100	min. 35,0	cm³/1000 strokes		
1 6 Full-load speed regulation	2600	11,0 -17,0	cm³/1000 strokes		
1.7 Load-dependent start of delivery	_				

2.1 Timing device	n = rev/min	1000 1500 1,3-2,1(1,0-2,4) (2,4-3,8)		2400 6,1-6,9(5,8-7,2)		
2.2 Supply pump	n = rev/min 600 ber (kgf/cm²) 2,8-3,4		2400 7,0-7,6			
Overflow delivery	n = rev/min cm ³ /10 s	600 55-138(40-153)		2400 55-138(40)-153)	
2.3 Fuel deliveries Speed control lever	Rot speed	Fuel delivery	Charge-air press. bar (kgf/cm²)	3. Dimens	sions for assembly and adjustment mm	
End stop	2800 2600 2400 1500 600	max. 3,0 (10,0-18,0) 27,5-29,5 (26,3-30,7) (31,3-35,7) 21,5-24,5 (20,0-26,0)		K KF MS SVS #FH	3,2-3,4 5,7-6,0 1,3-1,5 2,7 1,8-2,4	
switch-off elect.	400	0		8		
End stop	475 650 1200 400 500	650 max. 6,0 1200 max. 5,0 400 min. 18,0		Observations *operatin stroke (•	
2.4 Solenoid	max. cut-in volta	xxx min 10,0 V rated voltage 12V.				

WPP 001/4 VWW 1,6 W 2

1. Edition

VE 4/9 F 2400 R 138-1

0 460 494 140

supersedes

VWW company:

086

Overflow temperature 45° C

All test specifications are valid only for Bosch Fuel-injection Pump Test Benches and Testers

Test Instructions and Test Equipment

see VDT-W-460/...

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١	A	Į

Pre-stroke setting - mm				388 VD1-W-46U/		
1. Settings	Rot. speed rev/min	10080		Charge-air press. bar (kgf/cm²)	Difference in delivery cm ³	
1.1 Timing device travel	1500	2,9 - 3,3	mm			
1.2 Supply pump pressure	1500	4,9 - 5,5	bar (kgf/cm²)			
1.3 Full-load delivery without charge-air pressure	1500	33,0 -34,0	cm ³ /1000 strokes		2,5	
Full-load delivery with charge-air pressure	-	-	cm ³ /1000 strokes		2,0	
1.4 Idle speed regulation	450	6,0 -10,0	•		2,0	
1.5 Start	² 100	min. 35,0	cm ³ /1000 strokes			
1.6 Full-load speed regulation	2600	11,0 -17,0	cm ³ /1000 strokes			
1.7 Load-dependent start of delivery	-					

2. Test Spec	ifications	checking values in br	ackets ()			
.1 Timing device	n = rev/min mm	1000 1,3-2,1(1,		1500 2.4-3.8)	2400 6,1-6,9(5,8	-7,2)
2.2 Supply pump	n = rev/min bar (kgf/cm²)	600 2,8-3			2400 7,0-7,	6
Overflow delivery	n = rev/min cm³/10 s	600 55-138(40-153)		2400 55-138(40-	
2.3 Fuel deliveries Speed control lever	Rot. speed	Fuel delivery cm³/1000 strokes		Charge-air press. bar (kgf/cm²)	3. Dinien	for assembly and adjustment mm
End stop	2800 2600 2400 1500 600	max. 3,0	(10,0-18,0) (26,3-30,7) (31,3-35,7) (20,0-26,0)		K KF MS SVS *FH	3,2-3,4 5,7-6,0 1,3-1,5 2,7 1,8-2,4
switch-off mech. elektr.	2400 400	0			A B	
idle stop End stop	450 650 1200 400 500	(4,0-12,0) max. 5,0 max. 7,0 min. 18,0 max. 23,5			Observations *operatin stroke (•
2.4 Solenaid	max. cut-in volta	ge xxx min crated voltag	. 10 V ge 12V.			7.00

WPP 001/4 VWW 1,6 V 8 1. Edition

VE 4/9 F 2400 R 138-2

0 460 494 147

supersedes

VWW company: 086 engine:

Overflow temperature 45° C

All test specifications are valid only for Bosch Fuel-injection Pump Test Benches and Testers

Test Instructions and Test Equipment

see VDT-W-460/...

Pre-stroke setting

mm

1. Settings	Rot. speed rev/min	Settings		Charge-air press. bar (kgf/cm²)	Difference in delivery cm ³
1.1 Timing device travel	1500	2,9 - 3,3	mm		
1.2 Supply pump pressure	1500	4,9 - 5,5	bar (kgf/cm²)		
1.3 Full-load delivery without	1500	33,0 -34,0	cm ³ /1000 strokes		2,5
charge-air pressure Full-load delivery with	-		cm ³ /1000 strokes		
charge-air pressure 1.4 Idle speed regulation	425	6,0 -10,0	cm³/1000 strokes		2,0
1.5 Start	ع 100	min. 35,0	cm³/1000 strokes		
1.6 Full-load speed regulation	2600	11,0 -17,0	cm³/1000 strokes		
1.7 Load-dependent start of delivery	-				

2.1 Timing device	n = rev/min mm	1000 1,3-2,1(1,0-2,4)	1500 2400 (2,4-3,8) 6,1-6,9(5,8-7,2)			
2.2 Supply pump	$ \begin{array}{lll} \text{Imp} & n = \text{rev/min} & 600 \\ \text{bar (kgf/cm}^2) & 2,8-3,4 \end{array} $			2400 7,0-7,6		
)verflow delivery	n = rev/min cm ³ /10 s	600 55-138(40-153)		2400 55-138(40-	-153)	
2.3 Fuel deliveries Speed control lever	Rot speed	Fuel delivery	Charge-air press.	3. Dimen	Sions for assembly and adjustment mm	
End stop	2800 2600 2400 1500 600	max. 3,0 (10,0-18,0) 27,5-29,5(26,3-30,7) (31,3-35,7) 21,5-24,5(20,0-26,0)		K KF MS SVS *FH	3,2-3,4 5,7-6,0 1,3-1,5 2,7 1,8-2,4	
switch-off elect.	400	0		A B		
Idle stop End stop	650 max. 6,0 1200 max. 5,0			Observations *operati stroke	•	
2.4 Solenoid	max. cut-in voltag	e xx min. 10,0 V rated voltage 12V.				

VE 4/9 F 2400 R 138-3

0 460 494 148

46

WPP 001/4 VWW 1,6 V 7

1. Edition

En

<u>n___</u>

supersedes...

company: VWW engine: 086

Overflow temperature 45° C

All test specifications are valid only for Bosch Fuel-injection Pump Test Benches and Testers

Test Instructions and Test Equipment

see VDT-W-460/...

Testoil-ISO 4113

re-stroke setting 1. Settings	Rot. speed rev/min	Settings		Charge-air press. bar (kgf/cm²)	Difference in delivery cm ³
1.1 Timing device travel	1500	2,9-3,3	mm		
1.2 Supply pump pressure	1500	4,9-5,5	bar (kgf/cm²)		
1.3 Full-load delivery without charge-air pressure Full-load delivery with	1500	33,0-34,0	cm ³ /1000 strokes cm ³ /1000 strokes		2,5
charge-air pressure 1.4 Idle speed regulation	425	6,0-10,0	cm ³ /1000 strokes		2,0
1.5 Start	<i>></i> 100	min. 35,0	cm ³ /1000 strokes		
1.6 Full-load speed regulation	2600	11,0-17,0	cm ³ /1000 strokes		
1.7 Load-dependent start of delivery	-				

. Test Spec	citications	checking values in bra	ackets ()			400
1 Timing oxvice	n = rev/min mm	1000 1,3-2,1(1,	0-2,4)	1500 (2,4-3,8)	_	(5,8-7,2)
.2 Supply pump	n = rev/min bar (kgf/cm²)	600 2,8-3,4			_	400 0-7,6
)verflow delivery	n = rev/min cm ³ /10 s	600 55-138(40-	·153 ⁻)		_	400 40-153)
2.3 Fuel deliveries Speed control lever	Rot.speed	Fuel delivery		Charge-air press.	3. Dimen	BIONS for assembly and adjustment mm
End stop	2800 2600 2400 1500 600	max. 3,0 27,5-29,5	(10,0-18,0) (26,3-30,7) (31,3-35,7) (20,0-26,0)		K KF MS SVS *PH	3,2-3,4 5,7-6,0 1,3-1,5 2,7 1,8-2,4
eTëktr. mach.	400	0			A 8	
End stop	425 650 1200 400 500	max. 5,0 max. 7,0 min. 18,0 max. 23,5	(4,0-12,0)		*operating stroke (KSB)	
2.4 Solenoid	max. cut-in volta	xxx min.	10,0 V ge 12V.			

Festoil-ISC 4113

Test Specifications Distributor-type Fuel-injection Pumps

46

WPP 001/4 VWW 1,6 W 3 1. Edition

En

VE 4/9 F 2250 R 149 0 460 494 138 Overflow temperature 45° C

supersedes company: VWW engine: 086 T

All test specifications are valid only for Bosch Fuel-injection Pump Test Benches and Testers

Test Instructions and Test Equipment

see VDT-W-460/...

Pre-stroke setting

e setting

Rot, speed rev/min	Settings		Charge-air press. bar (kgf/cm²)	Difference in delivery cm ³
1500	3,8-4,2	mm	0,75 bar	
1500	5,5-6,1	bar (kgf/cm²)	0,75 bar	
600	23,5-24,5	cm ³ /1000 strokes	0	
1500	43,5-44,5	cm ³ /1000 strokes	0,75 bar	2,5
475	6,0-10,0	cm ³ /1000 strokes	0	2,0
100	min.35,0	cm ³ /1000 strokes	0	
2525	9,0-15,0	cm ³ /1000 strokes	0,75 bar	
	1500 1500 600 1500 475	1500 3,8-4,2 1500 5,5-6,1 600 23,5-24,5 1500 43,5-44,5 475 6,0-10,0 100 min.35,0	1500 3,8-4,2 mm 1500 5,5-6,1 bar (kgf/cm²) 600 23,5-24,5 cm²/1000 strokes 1500 43,5-44,5 cm²/1000 strokes 475 6,0-10,0 cm²/1000 strokes 100 min.35,0 cm²/1000 strokes	1500 3,8-4,2 mm 0,75 bar 1500 5,5-6,1 bar (kgf/cm²) 0,75 bar 600 23,5-24,5 cm²/1000 strokes 0 1500 43,5-44,5 cm²/1000 strokes 0,75 bar 475 6,0-10,0 cm²/1000 strokes 0 100 min.35,0 cm²/1000 strokes 0

			<u> </u>			
2. Test Spec	ifications	checking values in t	orackets ()			
2.1 Timing device LDA=0,75 bar	n = rev/min mm	1000 1,8-2,6(1,5		500 3-4,7)	2250 6,1-6,9(5,8-	7,2)
2.2 Supply pump LDA=0,75 bar	n = rev/min bar (kgf/cm²)	600 3,3-3,9)		2250 7,4-8,0	
Overflow delivery	n = rev/min cm ³ /10 s	600 55-138(40-	-153)	!	2250 55-138(40-15	53)
2.3 Fuel deliveries	<u> </u>				3. Dimen	Sions for assembly
Speed control lever	Rot. speed rev/min	Fuel delivery cm ³ /1000 strokes		Charge-air press. bar (kgf/cm²)	Designation	and adjustment mm
End stop	2750 2525 2250 1500 1000 600		(8,0-16,0) (37,3-41,7) (41,8-46,2) (31,8-36,2) (21,0-27,0)	0,75 bar	K KF MS SVS	3,2-3,4 5,7-6,0 1,2-1,4 4,4 1,8-2,4
					ЖК	18,4-20,4
switch-off electr.	400	0			ХЯL	8,6-12,0
Idlestop End stop	475 1200 400 500	max. 5,0 min. 22,0 max. 30,0	(4,0-12,0)		Use at (46) ** opera	troke 4,0 mm djusting nut to correct. ting scroke
2.4 Solenoid	cut-in voits		10,0 V 1 tage 12 V.		(cold	-start accel.)

BOSCH

Geschaftsbereich KH. Kundendienst. Kfz-Ausrüstung. 4. 1980 by Robert Bosch GmbH, Postfach 50, D-7000 Stuttgart 1. Printed in the Federal Republic of Germany. Imprime en République Ferférale d'Allemagne par Robert Bosch GmbH.

WPP 001/4 VWW 1,6 w 4

1. Edition

VE 4/9 F 2250 R 149-2 0 450 494 146

Testoil-ISO 4113

supersedes company VWW engine: 086 T

Overflow temperature 45° C

All test specifications are valid only for Bosch Fuel-injection Pump Test Benches and Testers

Test Instructions and Test Equipment

mm Pre-stroke setting

see VDT-W-460/...

1. Settings	Rot. speed rev/min	Settings	Settings		Difference in delivery cm ³
1.1 Timing device travel	1500	3,8-4,2	mm	0,75 bar	
1.2 Supply pump pressure	1500	5,5-6,1	bar (kgf/cm²)	0,75 bar	
1.3 Full-load delivery without	600	23,5-24,5	cm ³ /1000 strokes	0	
charge-air pressure Full-load delivery with	1500	43,5-44,5	cm ³ /1000 strokes	0,75 bar	2,5
charge-air pressure 1.4 Idle speed regulation	425	6,0-10,0	cm ³ /1000 strokes	0	2,0
1.5 Start	s 100	min. 35,0	cm ³ /1000 strokes	0	
1.6 Full-load speed regulation	2525	9,0-15,0	cm ³ /1000 strokes	0,75 bar	
1.7 Load-dependent start of delivery	_				

2. Test Spec	ifications	checking values in brackets (
2.1 Timing device LDA=0,75 bar	n = rev/min	1000 1,8-2,6(1,5-2,9)	1500 (3,3-4,7)	2250 6,1-6,9(5,8-7,2)
2.2 Supply pump LDA=0.75 bar	n = rev/min bar (kgf/cm²)	600 3,3-3,9		2250 7,4-8,0
Overflow delivery	n = rev/min cm ³ /10 s	600 55-138(40-153)		2250 55-138(40-153)
<u> </u>	1		19	Dimensions

2.3 Fuel deliveries	_1				3. Dim
Speed control lever	Rot. speed rev/min	Fuel delivery cm³/1000 strokes		Charge-air press bar (kgf/cm²)	Designation
End stop	2750 2525 2250 1500 1000 * 600	max. 3,0 38,5-40,5 33,5-34,5	(8,0-16,0) (37,3-41,7) (41,8-46,2) (31,8-36,2) (21,0-27,0)	0,75 bar 0,75 bar 0,3 bar	K KF MS SVS **PH
switch-off elect.	400	0			XT B XT
Idle stop End stop	425 1200 400 500	max. 5,0 min. 22,0 max. 30,0	(4,0-12,0)		Observation Ma
2.4 Solenoid	mex. cut-in volta	ge XXX min.	10,0 V		ad

MMXMMXXXXX rated voltage 12V.

Designation	for assembly and adjustment mm				
К	3,2-3,4				
KF	5,7-6,0				
MS	1,2-1,4				
svs	4,4				
**PH	1,8-2,4				
ЖX	18,4-20,4				
XL	8,6-12,0				
Observations Man 1	fold-pressure				

ompensator stroke 4,0 mm. orrection at the djusting nut.(46)

*operating

A6 BOSCH

Geschäftsbereich KH. Kundendienst. Kfz-Ausrüstung.

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46

WPP 001/4 VWW 2,0 i 4

1. Edition

VE 5/10 F 2250 L 150

0 460 405 033

supersedes companyVWW

engine: 153 T

Overflow temperature 45° C

All test specifications are valid only for Bosch Fuel-injection Pump Test Benches and Testers

Test Instructions and Test Equipment

Pre-stroke setting

Festoil-ISO 4113

0,2

mm = 0,02 (0,04)

see VDT-W-460/...

1. Settings	Rot. speed rev/min	Settings		Charge-air press. bar (kg//cm²)	Difference in delivery cm ³
1.1 Timing device travel	1500	3,1-3,5	mm	0,75 bar	
1.2 Supply pump pressure	1500	5,5-6,1	bar (kgf/cm²)	0,75 bar	
1.3 Full-load delivery without charge-air pressure	500	21,5-22,5	cm ³ /1000 strokes	0	
Full-load delivery with charge-air pressure	1500	43,5-44,5	cm ³ /1000 strokes	0,75 bar	2,5
1.4 Idle speed regulation	375	6,0-10,0	cm ³ /1000 strokes	0	2,0
1.5 Start	100 ء	min. 50,0	cm ³ /1000 strokes	10	
1.6 Full-load speed regulation	2525	9,0-15,0	cm ³ /1000 strokes	0,75 bar	
1.7 Load-dependent start of delivery	-				

2. Test Spec	ifications	checking values in brack	ets ()			
1 Timing device DA=0,75 bar	n = rev/min mm	850 1,1-1,9(0,8-	2,2)	1500 (2,6-4,0)	2250 5,4-6,2(5	
22 Supply pump DA=0,75 bar	n = rev/min bar (kgf/cm²)	500 3,2-3,8			7,3-7,	
Overflow delivery	n = rev/min cm³/10 s	500 55-138(40-153)			225 55-138(4	
2.3 Fuel deliveries Speed control lever		Fuel delivery		Charge-air press.	3. Dimens	for assembly and adjustment mm
End stop	2700 2525 2250 1500 850 *	37,0-39,0 32,5-33,5	(8,0-16,0) (35,8-40,2) (41,8-46,2 (30,8-35,2) (19,0-25,0)	0,75 bar 0,75 bar 0,75 bar 0,75 bar 0,3 bar	K KF MS SVS	- 5,7-6,0 1,7-1,9 4,2
switch-off elektr.	400	0			A 8	
idle stop End stop	375 450 400	max. 3,0 min. 18,0	(4,0-12,0)	Observations Adjust TAS or LDA pressure Manifold-pres	of 0.75 bar
2.4 Solenoid	max. cut-in voltage				compensator s Correction a adjusting nu	stroke = 3,6 t the

WPP 001/4 VWW 2,0 i 5

1. Edition

VE 5/10 F 2250 L 150-1 0 460 405 034

supersedescompany: VWW engine: 153 T

Overflow temperature 45° C

All test specifications are valid only for Bosch Fuel-injection Pump Test Benches and Testers

Yest Instructions and Test Equipment

l. Settings	Rot speed rev/min	Settings		Charge-air press. bar (kgf/cm²)	Difference in delivery cm ³
.1 Timing device travel	1500	3,1-3,5	mm	0,75 bar	
.2 Supply pump pressure	1500	5,5-6,1	bar (kgf/cm²)	0,75 bar	
.3 Full-load delivery without	500	21,5-22,5	cm ³ /1000 strokes	0	
charge-air pressure Full-load delivery with	1500	43,5-44,5	cm ³ /1000 strokes	0,75 bar	2,5
charge-air pressure 1.4 Idle speed regulation	375	6,0-10,0	cm ³ /1600 strokes	0	2,0
1.5 Start	<i>⁵</i> 100	min. 50,0	cm ³ /1000 strokes	0	
1.6 Full-load speed regulation	2525	9,0-15,0	cm ³ /1000 strokes	0,75 bar	
1.7 Load-dependent start of delivery	_				

2. Test Spec	ifications	checking values in br	ackets ()				
2.1 Timing device LDA=0,75 bar	n = rév/min mm	850 1,1-1,9(0,8	850 1,1-1,9(0,8-2,2) (2		5,4-6,2(5,	250	
2.2 Supply pump LDA=0,75 bar	n = rev/min bar (kgf/cm²)	500 3,2-3,8			2250 7,3-7,9		
Overflow delivery	n = rev/min cm³/10 s	500 55-138(40-153)				250 (40-153)	
2.3 Fuel deliveries Speed control lever	Rot speed	Fuel delivery		Charge-air press	3. Dimen	SiONS for assembly and adjustment mm	
End stop	2700 2525 2250 1500 850 *	max. 3,0 37,0-39,0 32,5-33,5	(8,0-16,0) (35,8-40,2) (41,8-46,2) (30,8-35,2) (19,0-25,0)	0,75 bar 0,75 bar 0,3 bar	K KF MS SVS	- 5,7-6,0 1,7-1,9 4,2	
switch-off mech. elektr.	2250 400	0 0			A B		
Idle stop	375 450 400 500	max. 3,0 min. 18,0 max. 25,0	(4,0-12,0)		Adjust TAS only at full LDA pressure of 0.75 bar Manifold-pressure dompensator stroke = 3,6		
2.4 Solenoid	max. cut-in volta		10 V age 12V.	Correction at the adjusting nut (46).			

46

WPP 001/4 VWW 2.4K 1
1. Edition

En

VE 6/10 F 2150 L 151

0 460 406 039

supersedes

company: VWW

ingine: 087

Overflow temperature 45° C

All test specifications are valid only for Bosch Fuel-injection Pump Test Benches and Testers

Test Instructions and Test Equipment

see VDT-W-460/...

Pre-stroke setting

1. Settings	Rot. speed rey/min				Difference in delivery cm ³
1.1 Timing device travel	1500	2,8-3,2	mm		
1.2 Supply pump pressure	1500	5,5-6,1	bar (kgf/cm²)		
1.3 Full-load delivery without charge-air pressure Full-load delivery with	1500	28,0-29,0	cm ³ /1000 strokes		2,5
charge-air pressure 1.4 Idle speed regulation	375	6,0-10,0	cm³/1000 strokes		2,0
1.5 Start	<i>></i> 100	min. 35,0	cm³/1000 strokes	,	
1.6 Full-load speed regulation	2400	9,0-15,0	cm³/1000 strokes		
1.7 Load-dependent start of delivery	-				

z. Test Spec	ancations	checking values in brackets ()		045	
1 Timing device	n = rev/min	1000 0,7-1,5 (0,4-1,8)	1500 (2,3-3,7)	215 4,9-5,7	(4,6-6,0)
.2 Supply pump	n = rev/min	600		7,3-7	
	bar (kg!/cm²)	3,0-3,6			
Overflow delivery	n ≃ rev/min cm³/10 s	600 55-138 (40-153)		215 55-138 (4	
2.3 Fuel deliveries	J.D.J. annud	Fuel delivery	Charge-air press.	3. Dimens	tor assembly and adjustment mm
Speed control lever	Rot. speed rev/min	cm³/1000 strokes	bar (kgf/cm²)		
End stop	2600	max. 3,0		K	3,2-3,4
	2400	(8,0-16,0)		KF	6,4-6,7
	2150	23,0-25,0 (21,8-26,2)		MS	1,4-1,6
	1500	(26,3-30,7)		svs	max. 2,6
•	750	25,0-28,0 (23,5-29,5)		• FH	1,8-2,4
				A	
switch-off elect.	400	0		8	
Idle stop	375 450	max. 3,0 (4,0-12,0)		Observations *operating	9
End stop	400 500	min. 25,0 max. 27,0		stroke (~
2.4 Solenoid	max. cut-in voite	se xxx min. 10 V rated voltage 12V.			

BOSCH

WPP-001/4 VWW 2,4 =

1. Edition

VE 6/10 F 2150 L 152

0 460 406 040

Pre-stroke setting

supersedes

company: VW

engine: 087 T-LT

Overflow temperature 45° C

All test specifications are valid only for Bosch Fuel-injection Pump Test Benches and Testers mm

Test Instructions and Test Equipment

see VDT-W-460/...

1. Settings	Rot, speed rev/min	Settings		Charge-air press. bar (kgf/cm²)	Difference in delivery cm ³
1.1 Timing device travel	1500	2,3-2,7	mm	0,75	
1.2 Supply pump pressure	1500	5,9-6,5	bar (kgf/cm²)	0,75	
1.3 Full-load delivery without	600	23,5-24,5	cm³/1000 strokes	0	
charge-air pressure Full-load delivery with	1500	41,5~42,5	cm³/1000 strokes	0,75	2,5
charge-air pressure 1.4 Idle speed regulation	375	6,0-10,0	cm³/1000 strokes	0	2,0
1 5 Start	100	min. 35,0	cm³/1000 strokes	0	
1.6 Full-load speed regulation	2400	9,0-15,0	cm³/1000 strukes	0,75	
1.7 Load-dependent start of delivery	_			1	

2.1 Timing device	o = rev/min	1000		1500	21	50	
LDA=0,75 bar	mm	0,5-1,3(0	,2-1,6)	(1,8-3,2)	4,4-5,2(4,1-5,5		
2.2 Supply pump LDA=0,75 bar	n = rev/min bar (kgf/cm²)	600 3,5-4,1			2150 7,6-8,2		
Overflow delivery	n = rev/min cm ³ /10 s	600 55-138(40-153)			2150 55-138(40-1 5 3)		
2.3 Fuel deliveries	·	·	<u> </u>		3. Dimen	for essembly	
Speed control lever	Rot. speed rev/min	Fuel delivery cm ³ /1000 strokes		Charge-air press. bar (kgf/cm²)	Designation	and adjustment mm	
switch-off	2600 2400 2150 1500 750 * 600	max. 3,0 35,0-37,0 32,5-33,5	(8,0-16,0) (33,7-38,3) (39,5-44,3) (30,7-35,3) (21,7-26,3)	0,75 0,75 0,75 0,75 0,3	KF MS SVS FH A	3,2-3,4 6,3-6,6 1,0-1,2 3,8 1,8-2,4	
End stop	450 375 400 500	max. 3,0 min. 25,0 max. 27,0	(4,0-12,0)	= 4,5 mm Correction	tor stroke on at the g nut. (46)		
2.4 Solenoid	max. cut-in volte	xxx min. rated voltage			stroke (KSB)		

Geschäftsbereich KH. Kundendienst. Kfz-Ausrüstung.
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WPP 001/4 HOR 2,0 b

4. Edition

PES 2 A 80D 410/3 RS 1329 Komb.-Nr. 0 400 462 053 RSV 400-1250 AOB 1123 L

supersedes 8.82 company: Holder

VD 6001/2

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers a

A. Fuel Injection Pump Settings

Port closing at prestroke

(1.65-1.85)

mm (from BOCW=7,5-10,5mm

Rotational speed	Control rod travei	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min 1	 mm 2	cm³/100 strokes 3	cm³/ 100 strokes 4	mm 2	cm ³ /100 strokes 3	mm 6
1250	9,7-9,8	6,0-6,1	0,2 (0,3	5)		
400	6,7-6,9	6,0-6,1	0,2 (0,3	1		
					•	

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper	rated speed		Intermediate				rated spe		③ Tor	que control
Degree of deflection of control lever	rev/min	Control rod travel	Degree of deflection of control lever	rev/min	Control rod travel	Degree of deflection of control lever	rev/min	Control rod travel mm	rev/min	travel
1	2	3	Î4	5	6	7	8	9	10	11
loose	X =	0,3-1,0 3,75	-	•	-	ca. 20	100 400	min 19; 6,7-6,9 565= 2,0		
\$ ca.46	8,7 4,0 1495	1290-1300 1330-1360 0,3-1,7)03	3032 2,0		

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2 Full-to	ad stop	6 Rotational- speed limitat 3a Fuel delivery characteristics			Starting Idle	fu al delivery	5a) Idle stop		
Test oil temp rev/min 1	cm ² /1000 strokes	Note: changed to rov/min 3	rav/min 4	cm ³ /1000 strokes 5	rev/min	cm³/1000 strokes 7	rev/min 8	Control rod travel mm	
1250	59,5-60,5 (58,0-62,0)	1290-1300*	-		-	-			

Checking values in brackets

* 1 mm less control rod travel than col. 2

6.83

WPP 001/4 MWM 3,1a 2. Edition

PES 3 A 80 D 320 RS 1338 Komb.-Nr. 0 400 473 086 RSV 300-1000 A 7 B 505-1R

supersedes 8.82

company: MWM

engine: D 226-3

All test specifications are velid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

2,2-2,3

mm (from BDC)

Rotational speed rev/min	Control rod travel mm	(2,25-2,35) Fuel delivery cm ³ /100 strokes 3	Difference cm³/ 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
980	9,7-9,8	4,8-4,9	0,2(0,35)		
300	7,4-7,6	0,8-1,4	0,2(0,3)			
	•				•	

Adjust the fuel delivery from each outlet according to the values in [

B. Governor Settings

Upper	rated speed		Intermediate	rated spe	ed	4 Lowe	r rated spe	3 Torque control		
Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	10	11
loose	800	0,3-1,0	-	-	-	ca.27	300	7,0	-	-
	X = (,0					100	min.19,5 7,4-7,6		
3 .63	8,7 4,0 1205	1020-1030 1050-1080 0.3-1.7						455=2,0		

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2 Full-	oad stop	6 Rotational- speed limitat.				fuel delivery	Se Idle stop		
Test oil temp. 40°C (104°F) rev/min cm³/1000 strokes 1 2		Note: changed to rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm³/1000 strokes 7	rev/min 8	Control rod travel mm	
980	48,0-49,0 (46,5-50,5)	1020-1030*	600	40,5-43,5 (39,0-45,0)	100	93,5-109,5 bei 19,5-2 mm RW		-	

Checking values in brackets

* 1 mm less control rod travel than col. 2 6.83

MAN 9.7 L2 WPP 001/4

3. Edition

PES 6 A 95 D 410 RS 2108

EP/RSV 200-1100 A1 B 607L

supersede 8 - 80

company: MAN - RABA

200-1050 A1 B 607L

D 2156 ..

450-1050

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

Festoil-ISO 4113

mm (from BDC)

Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm 2	cm ³ /100 strokes	cm ³ / 100 strokes 4	mm 2	cm ^{3/1} 00 strokes 3	mm 6
1000	9	8,4 - 9,4				
	6 15	4,0 - 5,0 16,6 - 17,8				
200	9	5,9 - 6,9				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

200-1100

	r rated speed Control rod travel mm	rev/min Control rod travel mm rev/min	Interme	ediate ra	ted speed	Control- lever deflection in degrees 7	rev/min 8	er rated speed Control rod travel mm	3 To	rque control Control rod travel mm
ca. 60	1100 1150 1180	16,0 11,0 6,4			•	ca. 24	100	6,0 19 - 21 5,7-6,3	1080	0 1,2 - 1,8
23	1140 1180 1300	10,4-12,8 4,0-8,4 0,3-1,0	ŀ		uxiliar liary s	y spring pring	300 450	2,2-4,1		7,2 1,0

The numbers denote the sequence of the lests

C. Settings for Fuel Injection Pump with Fitted Governor

(2b) Full-load slop Test oil temp. 40°C (104°F)		Note:	Fuel delivery characteristics		Starting tildle	fuel delivery 5	(da) idle stop Control rod travel	
rev/min 1	cm³/1000 strokes	changed to) rev/min 3	rev/min 4	cm³/1000 strokes 5	rev/min 6	cm³/1000 strokes 7	rev:min 8	mm 9
1100	93,5 - 96,4	1140-1150*			100	min. 20,0 mm RW		

Checking values in brackets

* 1 mm less control rod travel than col. 2

5.83

B. Governor Settings

1 Upper Degree of deflection of control lever	rated speed	Control rod travel mm	Intermediate Degree of deflection of control lever	rated spe rev/min 5	Control rod travel mm	Lower Degrae of deflection of control lever	rated spe rev/min 8	ced Control rod travel mm	3 Tor	que control Control rod travel mm 11
ca.60	1050 1120 1160	16,0 9,8 5,0	I		liary spr	ŀ	200 100 200	6,0 19-21 5,7-6,3	1030 250	0 1,2-1,
⑤	1120 1180 1260	8,0-11,8 2,0-4,5 0,3-1,0	with a	uxilia	ry spring		300 420	2,0-3,9 0 -1,0		

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2 Full-4	oad stop	6 Rotational- speed limitat		el delivery aracteristics				e stop
Test oil ten rev/min t	cm ³ /1000 strokes	Note: changed to rev/min 3	rev/min	cm³/1000 strokes 5	rev/min	cm ³ /1000 strokes 7	rev/min	Control rod travel mm 9
1100	93,5-96,4	1140-1150*	-	•	100	min. 20,0 mm RW	-	-
			60					

Checking values in brackets

Testoil-ISO 4113

* 1 mm less control rod travel than col. 2

B. Governor Settings

450-1050

1 Upper Degree of deflection of control lever	rated speed rev/min 2	Control rod travel mm 3	Intermediate Degree of deflection of control lever	Control rod travel mm	4 Lowe Degree of deflection of control lever 7	rev/min	Control rod travel mm		que control Control rod travel mm
ca.60	1050 1100 1150 1120 1200 1300	16,0 11,7 6.5 8,5-11,0 2,1-4,7 0,3-1,0	4	iliary spr iry spring		100 450 550 580	19-21 5,7-6,3 2,3-4,0 0-1,0	1050 300	0 0,8-1,4

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2 Full-to	ad stop	6 Rotational- speed limitat.		el delivery aracteristics	Starting Idle	tuel delivery	(5a) Idle stop	
Test oil temp. 40°C (104°F) rev/min		Note: changed to rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	i i	Control rod travel mm 9
1050	133,5-139,5	1080-1090*	750	135,5-139,5	100	min. 20,0 mm RW	-	-
	: ,						,	

Checking values in brackets

* 1 mm less control rod travel than col. 2

WPP 001/4 MAN 9,7 1 5 1. Edition

PES 6 A 95 D 410 RS 2108

RSV550-1100 A 1

supersedes MAN company

Komb.-Nr. 0 400 876 235

Port closing at prestroke

Testoil-ISO

engine

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

mm (from BDC)

prestroke (1,	,65-1,85)	mm (from GDC)			
Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
mm (2)	cm ¹ /100 strokes	100 strokes	mm	cm³/100 strokes	mm
2	3	4	2	3	6
10,2+0,1	9,4-9,5	0,3(0,6)	<u> </u>		_
5,9-6,1	1,6-2,2	0,35(0,55	þ		
	Control rod travel mm 2 10,2+0,1	(1,65-1,85) Control rod travel mm 2 cm ^{1/100} strokes 2 10,2+0,1 9,4-9,5	(1,65-1,85) Control rod travel mm 2 cm ^{1/100} strokes cm ^{3/} 10,2+0,1 9,4-9,5 0,3(0,6)	(1,65-1,85) Control rod travel mm 2 cm ³ /100 strokes cm ³ /100 strokes mm 2 10,2+0,1 9,4-9,5 0,3(0,6)	Control rod travel mm 2 cm ^{3/1} 100 strokes cm ^{3/1} 2 cm ^{3/1} 100 strokes mm cm ^{3/1} 100 strokes 3 10,2+0,1 9,4-9,5 0,3(0,6)

Adjust the fuel delivery from each outlet according to the values in [

B. Governor Settings

(1) Uppe	er rated speed	rev/min	Interm	ediate rat	ed speed	(4)	Lower	rated speed	(3)	rque control
Degree of deflection of control lever	Control rod travel mm	Control rod travel mm rev/min	4	5	6	Control- lever deflection in degrees 7	rev/min	Control rod travel mm	rev/min	Control rod travel mm
loose	800	0,3-1,0	-	-		ca.29	550	5,5	1100	10,2-10,3
	х -	2,25	j				100	min.19,5	500	10,2-10,4
23.56 23.56	9,2 4,0	1140-1150 1155-1185					500 660-72	5,9-6,1 = 2,0	370	11,3-11,9

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

(2b) Fu	ill-load stop	6 Rotational- speed limitat	30 F	uel delivery haractenstics	Staning f	uel delivery 5	(4a) Idi	e stop
rev/min	cmp. 40°C (104°F) cm³/1000 strokes	Note: changed to) rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm³/1000 strokes 7	rev/min 8	Control rod travel mm
1100	94,0-95,0 (92,0-97,0)	1140-1150*	-	<u>-</u>	-	es.	-	-

Checking values in brackets

* 1 mm less control rod travel than col. 2

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A15

WPP 001/4 TOP 19.0 a 1. Edition

PE 12 A 85 D 610 RS 2141

RSV 200-1100 A1B 253 DL

supersedes

Torpedo company T 519

Komb.-Nr. 0 400 670 005

1-12-4-9-2-11-6-7-3-10-5-8

 $0-45-60-105-120-165-180-225-240-285-300-345^{\circ} \pm 0,5^{\circ}$ ($\pm 0,75^{\circ}$) All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

2,15-2,25 (2.10-2.30)

mm (from BDC) RW = 9.0-12.0 mm

Hotational speed rev/min	Control rod travel	Fuel delivery	Difference cm ³ / 100 strokes	Control rod travel	Fuel delivery cm²/100 strokes	Spring pre-tensioning (torque-control valve) mm
1000	12,4+0,1	8,7-8,8	0,3(0,45)	2	3	
500	12,8+0,1	8,2-8,4	1			
				<u></u>		

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Uppe	r rated speed	l rev/min	Interme	diate rate	d speed	(4)	Lower	rated speed	I(3)	rque control
Degree of deflection of control lever	Control rod travel mm	Control rod travel mm rev/min	4	5	6	Control- lever deflection in degrees 7	rev/min	Control rod travel mm	rev/min	Control rod travel mm
loose	800 X ≠	0,3-1,0	-	-		ca.24	200 100 200	5,5 min.19,0 5,9-6,2	1000 500 800	12,4-12,5 12,8-12,9 12,7-12,9
ca.55	11.4 4,0 1250	1040-1050 1155-1185 0,3-1,7					420-480			

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

	ull-load stop emp. 40°C (104°F)	8 Rotational- speed limitat	Sa Fuel delivery characteristics		Starting f	uel delivery (5)	da idle stop		
rev/min	cm³/1000 strokes 2	changed to .) rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min	cm ³ /1000 strokes 7	rev/min 8	travel mm 9	
1000	86,5-87,5 (84,5-89,5)	1040-1050*	500 700	82,0-84,0 (80,0-86,0) 87,5-90,5 (85,5-92,5)	-	-			

Checking values in brackets

* 1 mm less control rod travel than col. 2

6.83

Geschäftsbereich KM. Kundendienst, Kfz-Ausrüstung. € 1980 by Robert Bosch GmbH, Postfach 50, D-7000 Stuttgart 1. Printed in the Federal Republic of Germany Imprimé en République Fédérale d'Allemagne par Robert Bosch GmbH.

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WPP 001/4 MB 5,7 q 5 3. Edition

<u>En</u>

PES 6 A 90 2 410 RS 2293

RSV 350-1400 A 0 B 788 DL

supersede 8.82

company Daimler-Benz

engine OM 352 A

124 kW (168 PS)

Unimog

Komb.-Nr. 0 400 876 258

H = 22,5 mm

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestruke

Testoil-ISO 4113

2,15-2,25 (2,10-2,30)

mm (from BDC)

Rotational	Control rod	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
speed rev/min	mm 2	cm ¹ /100 strokes	cm³/ 100 strokes 4	mm 2	cm ³ /100 strokes 3	mm 6
1400	11,3+0,1	7,4 - 7,5	0,3(0,45)			
350	6,7-6,9	0,5 - 1,1	0,2(0,4)			

Adjust the fuel delivery from each cutlet according to the values in

B. Governor Settings

1 Uppe	r rated speed		Interme	diate rate	d speed	(4)		rated speed Control rod	(3) 101	rque control Control rad
Degree of deflection of control lever	travel mm	Control rod travel mm rev/min	4	5	6	Control- lever deflection in degrees 7	rev/min	travel mm 9	rev/min	travel mm 11
loose	800	0,3-1,0	-	-	<u>-l</u>	19-21	350	6,3	1400	11,3-11,4
10036	x =	5,0					100	min.19,0	500	11,5-11,6
67-70 (2a)	10,3 4,0 1600	1440-1450 1500-1530 0,3-1,7					350 530-5 700	6,7-6,9 90 = 2,0 max.1,0		

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

	II-load stop	6 Rotational- speed limitat		el delivery aracteristics	Starting fi	uel delivery 5	(4a) Idle stop	
Test oil to rev/min 1	emp. 40°C (104°F) cm ³ /1000 strokes	Note: changed to) rev/min 3	rev/min 4	cm³/1000 strokes 5	rev/min	cm ³ /1000 strokes 7	rev/min 8	travel mm 9
I_DA 1400	0,5 bar 74,0-75,0 (72,0-77,0)	1440-1450*	LDA 500 LDA 500	0,5 bar 62,0-64,0 (60,0-66,0) 0 bar 54,0-56,0 (52,0-58,0)	100	13,7-14,3 mm RW	-	-

Checking values in brackets

* 1 mm less control rod travel than col. 2

6.83

BOSCH

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D. Adjustment Test for Manifold Pressure Compensator

Testain =

500

rev/min decreasing pressure - in bar gauge pressure

MB 5,7 q 5

200			110 5,7 q 5 -2-
Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1) .
PES6A RS 2293		0	10,8 - 10,9
with AOB 788 DL		0,29	11,1 - 11,2
	0,50		11,5 - 11,6
L			<u> </u>

Notes:

(1) when n =

rev/min and gauge pressure =

bar (= maximum full-load control rod travel)

Testing the hydraulic start-locking device

Locking at Unlocking at

0,4 - 0,5 bar 0,15 - 0,25 bar

WPP 001/4 MB 5,7 q 8 1. Edition

PES 6 A 90 D 410 RS 2293

RSV 350-1200 A0B 1101-1 L

supersede 5

company Daimler-Benz

OM 352

70 kW (95 PS)

Komb.-Nr. 0 400 876 316

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

2,15-2,25 (2,10-2,30)

mm (from 80QW = 9,0-12,0 mm

	(~;	, (0~2,50)				
Rotational	Control rod	Fue! delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
speed		cm ³ /100 strokes	cm ³ / 100 strokes	mm	cm ³ /100 strokes	mm
rev/min 1	mm (2)	3	4	2	3	6
1200	8,4-8,5	4,5-4,6	0,3(0,45)			
350	7,1-7,3	0,8-1,2	0,2(0,4)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

	r rated speed Control rod travel mm		Intermed	diate rated	speed	Control- lever deflection in degrees 7		rated speed Control rod travel mm		que control Control rod travel mm
loose	800 x =	0,3-1,7	-	•	••	-	350 350	7,2 7,1-7,3	1200 600 800	8,4-8,5 9,8-9,9 9,5-9,7
ca.65	7,4 4,0 1400	1225-1235 1290-1320 0-1,7			_		475-535	= 2,0	1000	8,9-9,2

The numbers denote the sequence of the tests ...

C. Settings for Fuel Injection Pump with Fitted Governor

ピツ	II-load stop	6 Rotational- speed limitat		el delivery aracteristics	Starting fi	uel delivery 5	(m)	e stop Control rod
	emp. 40°C (104°F) cm³/1000 strokes 2	Note: changed to) rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm3/1000 strokes	rev/min 8	travel mm 9
1200	45,0-46,0 (43,0-48,0)	1220-1230*	600	45,0-47,0 (43,0-49,0)	100	78,0-88,0 = 14,9- 15,3 mm RW	-	-

Checking values in brackets

* 1 mm less control rod travel than col 2

7.83

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WPP 001/4 MB 5,7 q 3

Edition

PES 6A 90D 410RS 2293

Komb.-Nr. 0 400 876 260

RSV 350-1300A0B1105DL(1)

supersedes 2.82

company:

Daimler Benz OM 352

92 kW(125PS)(1)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Rotational speed	Control rod travel	Fuel delivery cm ³ /100 strokes	Difference cm ³ / 100 strokes	Control rod travel	Fuel delivery cm ³ /100 strokes	Spring pre-tensioning (torque-control valve)
rev/min 1	min	3	4	2	3	6
1300	9,5-9,6	6,2 - 6,3	0,3(0,45)			
350	6,3-6,5	0,4-0,9	0,2(0,4)			
800	0,2+0,2	C.Sp. 4-5	0,4(0,55)	1		
500	10,3+0,1					
	}					

Adjust the fuel delivery from each outlet according to the values in [

B. Governor Settings

Upper	rated speed		Intermediate	rated spe	ed	4 Lowe	r rated spe	ed	3 Torque control		
Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel	Degree of deflection of control lever	rev/min	Control rod travel mm	rev/min	Control rod travel	
1	2	3	4	5	6	7	8	9	10	11	
100se	800	0,3 - 1,0	-	-	•	ca.28	350	5,9	1300	9,5-9,6	
-	χ =	5,5	;				100	min.19,0	800	0,2-10,	
€a. 64	8,5 4,0 1550	1340-1350 1380-1410 0,3-1,7	; [490	350 700 550	6,3-6,5 max.1,0 = 2,0	500	0,3-10,	

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2 Full+	pad stop	Rotational- speed limitat.		el delivery gracteristics	Starting Idle	fuel delivery	(5a) Idle stop		
Test ait temp. 40°C (104°F) rev/min cm³/1000 strokes 1 2		Note: changed to rev/min 3	rev/min cm³/1000 strokes 4 5		revinin cm³/1000 strokes 6 7		rev/min 8 9		
1300	62, 5 - 63, 5 (60, 5 - 65, 5)	1340-1350*	800 500	60,0 - 62,0 (58,0 - 64,0) 54,0 - 56,0 (52,0 - 58,0)	100	79,25-89,25 bei 13,7- 14,3 mm RV	1	6,4	

Checking values in brackets

* 1 mm less control rod travel than col. 2

6.83

40

WPP 001/4 KHD 9,6 k 1. Edition

En

PES 6 A 95 D 410 RS 2416

RSV 325-1100 A 8 B 2040 L

supersedes

KHD

Komb.-Nr. 0 400 876 279

company engine:

BF6L413 FRC

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

1,75-1,85 (1,70-1,90)

mm (from BDC)

Rotational speed	Control rod travel	ruel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)	
rev/min	mm (2)	cm³/t∂0 strokes	cm ³ / 100 strokes	mm	cm³/100 strokes	mm	
1	2	3	4	2	3	6	
1100	10,6+0,1	11,2-11,4	0,3 (0,6				
325	5,4-5,6	0,9-1,5	0,3 (0,5			·	
•							

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Degree of deflection of control lever	r rated speed Control rod travel mm	Control rod travel mm rev/min	Interme	diate rated	speed	Control- lever deflection in degrees		rated speed Control rod travel mm	9	rque control Control rod travel mm
loose	800 X :	0,3-1,0 = 4,0		-	-	ca.16	325 100	5.5 min.19,0		10,6-10,7 10,6-10,8
ca. 49	9,6 3,7 1330	1140-1150 1165-1195 0,3-1,7					325 440-5 600	5,9-6,1 00 = 2,0 max. 1,0	375	11,8-12,4

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

(2b) Fu	II-load stop	6 Rotational- speed limitat	(3a) Fu	iel delivery paracteristics	Starting f	uel delivery 5	4a Idle stop		
Test oil te rev/min	emp. 40°C (104°F) cm³/1000 strokes 2	Note: changed to) rev/min 3	rev/min	cm³/1000 strokes 5	rev/min	cm³/1000 strokes 7		Control rod travel mm	
LDA 1100	0,5 bar 111,5-113,5 (109,5-115,5)	1140 -1150*	LDA 900 LDA 500	0,5 bar 114,0-117,0 (112,0-119,0) ú bar 77,5-80,5 (75,5-82,5)	100	120,0-130 = 13,4 - 14,0 mm RW	0 -	_	

Checking values in brackets

* 1 mm less control rod travel than col 2

BOSCH

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D. Adjustment Test for Manifold Pressure Compensator

KHD 9,6 K

- 2 -

Test	at	n	4

500

rev/min decreasing pressure - in bar gauge pressure

Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1) .
PES6ARS2416 + RSVA8B 2040L	0,24	0,49 0,35 0	9,6-9,9 10,6-10,7 10,3-10,4 9,5-9,6

Notes:

(1) when n =

rev/min and gauge pressure =

bar (= maximum full-load control rod travel)

WPP 001/4 GMC 7,8 a 1. Edition

PES 6 A 90 D 410 LS 2436

RSV 400-1250 A2B 725 DL

supersedes

1 - 6 - 5 - 4 - 3 - 2

company

GMC DH-478 engine 110 PS

Komb.-Nr. 0 400 876 215

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

Testoil-ISO 4113

(3,95-4.15)

mm (from BDC)

Rotational speed rev/min	Control rod travel	Fuel delivery cm ¹ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm	Fuel delivery cm ² /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1000	9,0-9,1	5,2-5,5				
	12,0+0,2	8,0-8,8				
200	9,0-9,2	2,3-3,1				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

	r rated speed		Interme	diate rated	speed	(4)	Lower	rated speed	(3) to	rque control
Degree of deflection of control	Control rod travel	Control rod travel mm rev/min				Control- lever deflection	rev/min	travel	rev/min	travel mm
lever	2	3	4	5	6	in dagrees 7	8	9	10	11
ca.48	1250	16,0				ca.19	400	5,5	1230	0 5 0 7
	1350 1400	7,0 1,8	with	out al	ıvilia	ry sprin	200 400	19,0-21, 5,2-5,8	300	0,5-0,7
29	1300 1360 1530	10,8-12,5 4,1-7,5 0,3-1,0		auxil		Į.	700	1,5-3,4		

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

(L)	µll-load stop emp. 40°C (104°F)	6 Rotational- speed limitat		uel delivery naractenstics	Starting f	uel delivery 5	Idle stop	
rev/min	cm³/1000 strokes	changed to) rev/min 3	rev/min	cm³/1000 strokes 5	rev/min 6	cm³/1000 strokes 7	rev/min	travel mm 9
1250	71,5-72,5 (69,5-74,5)	1280-1290*	500	60,5-63,5 (58,5-65,5)	100	mind. 99,0		_

Checking tralues in brackets

* 1 mm less control rod travel than col. 2

6.83

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WPP 001/4 KHD 12,7 r 1. Edition

PF 8 A 95 D 410 LS 2451 Komb.-Nr. 0 400 673 040 RSV 300-1325 A 8B 1002suBtrsedes KHD company

engine F8L413F

1 - 8 - 7 - 2 - 6 - 5 - 4 - 3 je $45^{\circ} \pm 0.5^{\circ} (\pm 0.75^{\circ})$

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers (1) 173 kW (235 PS) bei n=2650min⁻¹

A. Fuel Injection Pump Settings

(2) 157 kW (213 PS) bei n=2300min⁻¹

Testoil-ISO 4113

(1,95-2,15)

mm (from BDC)

Rotational speed rev/min	Control rod travel	Fuel delivery cm ¹ /100 strokes 3	Difference cm ¹ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (forque-control valve) mm 6
1325	9,7-9,8	9,2-9,4	0,3(0,6)			
300	5,9-6,1	0,9-1,5	0,5(0,9)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

	r rated speed		Interme	diate rate	d speed	(4)	Lower	rated speed	(3) To	rque contru: Control rod
Degree of deflection of control lever	Control rod travel mm	Control rod travel mm rev/min	4	5	6	Control- lever deflection in degrees 7	rev/min 8	travel mm	rev/min	travel mm
loose .	800 X =	0,3-1,0 4,75	-	-	-	ca.20	300 100	6.0 min19,0	1325 500	9,7-9,8 10,0-10,1
ca.63	4,0 1	365-1375 420-1450 0,3-1,7					300 520-58 700	5,9-6,1 BD = 2,0 max. 1,0		

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

ピツ	ull-load stop emp. 40°C (104°F)	Rotational- speed limitat	11.34	el delivery aracteristics	Starting fi idle	uel delivery 5	C	Stop
rev/min	cm ³ /1000 strokes	changed to) rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min	cm³/1000 strokes 7	rev/min 8	travel mm 9
(1) 1325	91,5-93,5 (89,5-95,5)	1365-1375*	-	-	100	116,5-127 =14,0-	,5 -	-
(2) 1150	83,0-85,0 (81,0-87,0)	1190-1210*				14,4 mm RW		

Checking values in brackets

* 1 mm less control rod travel than col. 2

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A24

WPP G01/4 MWM 6,2 c 2 1. Edition

En

PES 6 A 90 D 320/3 RS 2464-1

RSV 325-1200 A0B 2182 R

Komb.-Nr. 0 400 866 115

company TD 226-6 107 kW engine:

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings 2,15-2,25 Port closing at prestroke (2,10-2,30) mm

estoil-ISO 4113

mm (from BDC)

Rotational speed	Control rod travel	Fuel delivery	Difference cm ³ /	Control rod travel	Firel delivery	Spring pre-tensioning (torque-control valve)
rev/min 1	mm (2)	cm ³ /100 strokes	100 strokes 4	mm 2	cm ³ /100 strokes	mm 6
1200	10,6+0,1	7,5-7,6	0,3(0,45)			
325	7,4-7,6	0,5-1,5	0,25(0,4)			
		ĺ				

Adjust the fuel delivery from each outlet according to the values in

Port closing difference between control-rod travel 9mm and max. = $3.5 - 4.5^{\circ}$ camshaft

B. Governor Settings

1 Uppe	er rated speed	l rev/min	Interm	ediate rat	ed speed	4	Lower	rated speed	(3) To	rque control
Degree of deflection	Control rod travel	Control rod travel				Control- lever		Control rod travel		Control rod travel
of control lever	mm 2	mm rev/min	4	5	6	deflection in degrees 7	rev/min 8	mm 9	rev/min 10	mm 11
loose .	800	0,3-1,0	-	-		ca.20	325	7,0	1180 500	10,6-10,7 11,5-11,6
	X =						325 520-580	7,4-7,6 = 2,0	875	11,0-11,2
ca.46	9,6 4,0 1460	1240-1250 1300-1330 0,3-1,7								

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

	emp. 40°C (104°F)	Rotational- speed limitat Note: changed to)		net delivery naracteristics	Starting f	uel delivery 5	•	Control rod travel
1	2	3	4	5	6	7	8	9
LDA 1200	0,7 bar 74,5-75,5 (72,5-77,5)	1240-1250*	LDA 500	0 bar 59,5-60,5 (57,5-62,5)	100	113,0-123 (110,0-126 = 19,5- 21,0 mm RW	(0)	

Checking values in brackets

* 1 mm less control rod travel than col. 2

6.83

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D. Adjustment Test for Manifold Pressure Compensator

MWM 6,2 c 2

Test at n =

500

rev/min decreasing pressure - in bar gauge pressure

Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1) .
PES6ARS2464-1 + RSVAOB2182R	0,70	0 0,14 0,13	11,5-11,6 11,0-11,1 11,3-11,4 11,1-11,3

Notes

(1) when n =

rev/min and gauge pressure =

bar (= maximum full-load control rod travel)

WPP 001/4 DEE 7,6 c 1 1. Edition

PES 6 A 95 D 410 RS 2522

RSV 400-1100 A 2 B 2009 DL

supersede5

company: John Deere

engine 6466 T

Komb.-Nr. 0 400 876 268

Use overflow valve 1 413 385 007 Suction-gallery pressure 1,5 bar

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

Testoil-ISO 4113

1,85-1,95 (1,80-2,00)

mm (from BDOZyl. 1;

Rotational speed rev/min	Control rod travel	Fuel delivery cm ³ /100 strokes 3	Difference cm ² / 100 strokes 4	Control rod travel mm	Fuel delivery cm³/100 strokes 3	Spring pre-tensioning (torque-control valve) mm
1100	10,2+0,1	9,6 - 9,8	0,3			
400	6,1-6,3	1,2 - 1,6	ε,ο			
			,			

Adjust the fuel delivery from each outlet according to the values in [

Port closing mark 15,5° camshaft after port closing of cylinder 1.

B. Gov	ernor	Settings	су	linder	1.				· 	
Cagree of deflection of control lever	r rated speed Control rod travel mm	rev/min Control rod travel mm rev/min 3	Interme	ediate rated	speed	Control- lever deflection in degrees 7	rev/min 8	rated speed Control rod travel mm	3 To	rque control Control rod travel mm
loose	800	0,3-1,0	-	-	-	ca. 21	400	5,6	1100	1
	x	=					100	19,0-21,		11,1+0,1
ca. 48	9,2 5,1 1300	1145-115 1200-123 0,3-1,7	þ				400 480-	5,9-6,1 540 = 2,0		

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

	II-load stop	6 Rotational- speed limitat	11341	el delivery aractenstics	Starting f	uel delivery 5	4a) Idi	e stop
Test oil to rev/min	emp. 40°C (104°F) cm²/1000 strokes 2	Note: changed to) rev/min 3	rev/min	cm³/1000 strokes 5	rev/min	cm³/1000 strokes 7	rev/min 8	travel mm 9
LDA 1 100	1,2 bar 95,0- 98,0 (93,0-100,0)	1145-1155*	LDA 650	1,2 bar 104,0-108,0 (101,0-111,0)	100 400	162-182 12,0-16,	· -	-
			LDA 500	0 bar 74,0-78,0 (71,0-81,0)				·

Checking values in brackets

* 1 mm less control rod travel than col. 2

7.83

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- 2 -

D. Adjustment Test for Manifold Pressure Compensator

DEE 7,6 c 1

Test at n =

500

rev/min decreasing pressure - in bar gauge pressure

300				
Pump/governor	Setting	Measurement	Control rod travel	diminution difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1)	
PES 6 ARS 2522 + RSVA2B2009DL	0,24	0,14	10,9 10,3	- 11,0 - 10,4
	•			

Notes.

(1) when n =

rev/min and gauge pressure =

bar (= maximum full-load control rod travel)

WPP 001/4 DEE 7,6

1. Edition

En

PES 6 A 95 D 410 RS 2522

RSV 400-1100 A 2 B 2009-1 L

John Deere company 6.466 TL

Kom.-Nr. 9 400 230 041

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

1,85-1,95 (1,8-2,0)

mm (from BDC)

Rotational speed	Control rod travel	Fuel delivery	Oifference cm ³ / 100 strokes	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
itev/min 1	mm (2)	3	4	2	3	6
1100	9,5-9,6	8,7-8,9	0,3			
400	5,7-5,9	1,2-1,6	0,3			
					ļ	

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

	r rated speed Control rod travel mm		Interme	diate rated	speed	Control- lever deflection in degrees 7	_	rated speed Control rod travel mm	11 9 /	rque control Control rod travel mm
loose	800	0,3-1,0	-	-	-	ca. 21	400 100	5,2 min.19,0	1100 750	9,5 10,3-10,6
ca. 48	8,5 4,0 1300	1145-1155 1195-1225 0,3-1,7					400 480-540 650	5,6-5,8 = 2,0 max. 1,0	500	9,5-9,6

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

(29)	Il-load stop	6 Rotational- speed limitat		el delivery aracteristics	Starting f	uel delivery 5	(4a) Idie	stop Control rod
Test oil te rev/min	emp. 40°C (104°F) cm³/1000 strokes 2	Note: changed to)		cm³/1000 strokes 5	rev/min 6	cm³/1000 strokes 7		travel mm
LDA 1100	0,7 bar 87,0-89,0 (85,0-91,0)	1145-1155*	LDA 750 LDA 500	0,7 bar 97,5-101,5 (95,0-104,0) 0 bar 74,0-78,0 (71,0-81,0)	100 400	16,2-18,2 = 21 mm RW 12,0-16,0		-

Checking values in brackets

* 1 mm less control rod travel than cot. 2

6.83

D. Adjustment Test for Manifold Pressure Compensator

Dee 7,6 c -2 -

Test at n =

500

rev/min decreasing pressure - in bar gauge pressure

Pump/governor	Setting	Measurement	diminution Centrol rod travel- difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1) ,
PES 6ARS 2522 + RSVA2 B 2009-	0,24 1 L	0,14	10,2-10,3 9,6-10,0
	•		
•			

Notes:

(1) when n =

rev/min and gauge pressure =

bar (= maximum full-load control rod travel)

4. Edition

restoil-ISO 411

PE 6 A 90 D 410 RS 2524 Komb.-Nr. 0 400 646 251

RO 225/1200 AB 1008 L

supersedes 11.82 company: DAF

DH 825

Specifications apply to test tubing 1 680 750 015

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings
(2,25-2,45)
Port closing at prestroke
2,30-2,40 RW9 m

mm (from BDC)

Rotational speed		Fuel delivery	Difference	Control rod travei	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm 2	cm ³ /100 strokes	100 suc 9	mm 2	cm ³ /100 strokes 3 .	mm 6
1000	9,4-9,5	7.0 - 7.1	0,3(0,45)			
225	6,5-6,7	0,9 - 1,5	0,2(0,4)			
		Port closing d	ifference - 5,5° c	between amshaft	control-rod ti	ravel 9mm

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

ev/min mm 1 2		rev/min 3	nod travel mm 4	red travel mm 5	rev/min 6	rev/min 7	red travel mm 8	rev/min 9	travel mm 10		travel mm 12
650 19	9,2-20,8	650	20,0		1245-1260 1325-1355		8,7	100	mia.10,2	-	-
VH = ma	x• 46°	•		1500	0 - 1,0				8,6 - 8,8 450=2.0 max. 1,0		

Torque-control travel on flyweight assembly dimension a =

Speed regulation: At

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load d governor of Test oil ter	lelivery on control lever np. 40°C (104°F)	Control rod stop	Fuel deliv	ery characteristics	36)	Starting for spee	d Control (and travel)
rev/min	cm³/-1000 strokes 2	rev/min 3	rev/min	cm ³ /-1000 strokes 5		rev/min 6	cm³/1000 strokes√ mm 7
1000	70,0 - 71,0 (68,0 - 73,0)	600	-	-		100	128,0-138,0 (125,0-141,0) = 19,5 - 21,0 mm RW

Checking values in brackets

WPP 001/4 DAF 8,3 i 1

5. Edition

PE 6 A 90 D 410 RS 2524

RSV 250-1200 A 5 B 2012 DL

supersede8.82 company: DAF

Cold start test on EP/RSV governor according to Service

DH 825

Information. Specifications apply to test tubing 1 680 750 015.

-Nr. 0 400 676 151

Att test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings (2,25-2,45) (2,30-2,40 RW 9 need (from BDC)

		Fuel delivery	Difference cm ³ /	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm	cm ³ /100 strokes 3	100 strokes	mm 2	cm ³ /100 strokes 3	mm 6
1000	9,4-9,5	7,0 - 7,1	0,3(0,45)			
250	6,5-6,7	0,9 - 1,5	0,2(0,4)			

Adjust the fuel delivery from each outlet according to the values in [

B. Governor Settings

Upper	rated speed	đ	Intermediate	rated spe	ed	4 Lowe	r rated spe	ed	3 To:	que control
Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	10	11
loose	800	0,3-1,0	-	-	•	ca.16	250	5,5	1000	9,4-9,5
	· X	3,0					250	5,9-6,1	400 300	9,4-9,6 9,5+0,5
§3a. 49	1260-						580-0	40=2,0		

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2 Full-l	oad stop	6 Rotational- speed limitat.		el delivery tracteristics	Startinr,	fuel delivery	Sa Idio	stop
rest oil temp. 40°C (104°F) rev/min cm³/1000 strokes 1 2		Note: changed to rev/min 3	rev/min	cm ³ /1000 strokes 5	r/w/min	cm³#%00 strokes 7	rev/min 8	Control rod travel mm 9
1000	70,0 - 71,0 (68,0 - 73,0)		-	•	100	128,0-138,0 125,0-141,0 = 19,5-21,0 mm RW)	-

Checking values in brackets

* 1 mm less control rod travel than col. 2

6.83

WPP 001/4 MB 5,7 x 6 2. Edition

PES 6 A 90 D 410 RS 2569 Komb.-Nr. 0 400 876 300 RSV 350-750 AOB 741 L

supersedes 11.82 Daimler-Benz OM 352

engine 52 kW (71 PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

Fuel Injection Pump Settings Testoil-ISO 411

ort closing at prestroke

2,25-2,35 (2.20-2.40)

mm (from BDC)

	,-					
Rotational speed	Control rod	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
•	mm (2)	cm ³ /100 strokes	cm ³ / 100 strokes	mm	cm ³ /100 strokes	mm
rev/min		3	4	2	3	6
700	11,2+0,1	5,4 - 5,5	0,3 (0,45	D		
350	7,4-7,6	0,5 - 1,1	0,2 (0,4)			
		ļ				
ı						1
			1			
}	l l	ļ.	1	1		

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Degree of deflection of control lever	crated speed Control rod travei mm		Interme	diate rat	es speed	Control- lever deflection in degrees 7		rated speed Control rod travel mm	(3) To	rque control Control rod travel mm 11
loose	800 x =	0,3-1,0	-	-	**	ca.15	350 100 420-480	7,5 min.19,5 = 2,0	-	-
ca.26	10,2 4,0 835	750-755 788-801 0,3-1,7			8		550	** max. 1,0		

**| Set auxiliary idle spring at 2.0 mm control-rod travel.

C. Settings for Fuel Injection Pump with Fitted Governor

	emp. 40°C (104°F)	Rotational-speed limitat Note: Speed limitat		et delivery aractenstics	Starting f	uel delivery 5	Control rod		
rev/min	cm³/1000 strokes 2	changed to) rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm³/1000 strokes 7	rev/min 8	travel mm 9	
700	54.0-55,0 (52,0-57,0)	750-755 •	-	-	100	78,0-88,0	-	-	

Checking values in brackets

* 1 mm less control rod travel than col. 2

6.83

WPP 001/4 MB 3,8 n 9 3. Edition

PES 4 A 90 D 410 RS 2570

Komb.-Nr. 0 400 844 081

RQV 300-1400 AB 1111-3L

supersettes 82

companyDaimler-Benz

engine: OM 314

57 kW (77 PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

troke	(2,20-2,40)	mm (from BDC)			
Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
10,5+0,1	5,9 - 6,0	0,3(0,45)		
8,6-8,8	1,1 - 1,5	0,2(0,4)			
	Control rod travel mm 2 10,5+0,1	Control rod travel Fuel delivery cm³/100 strokes 2 3	Control rod travel mm cm³/100 strokes 2 10,5+0,1 5,9-6,0 Difference cm³/ 100 strokes 4 0,3(0,45)	Control rod travel mm cm³/100 strokes 3 10,5+0,1 5,9 - 6,0 Difference cm³/100 strokes 4 Difference cm³/100 strokes 4 2 0,3(0,45)	Control rod travel Control rod travel Control rod travel Control rod travel Com³/100 strokes Control rod travel Com³/100 strokes Control rod travel cm³/100 strokes 2 10,5+0,1 5,9-6,0 0,3(0,45)

Adjust the fuel delivery from each outlet according to the values in [

B. Governor Settings

Testoil-ISO 4113

Upper rated :	peed		Intermediat	Intermediate rated speed			speed	Sliding sleeve travel		
Degree of deflection of control lever	rev/min Control rod travel mm	mm C	Degree of deflection of control lever	rev/min 5	Control rod travel mm 4	Degree of deflection of control lever	rev/min	Control rod travel	rev/min	0
max. ca.63	1500 9,5 4,0 1650	15,2-17, 1440-145 1535-156 0 - 1,	5	•	-	ca. 24	100 300 545-	min.10,2 8,6-8,8 605 = 2,0	630	0,7-0,9 4,8-4,9 5,3-5,4 7,7

Torque control travel a =

mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-roc Test oil ten rav/min		limitation intermediate speed	high idle s	very characteristics 5a poed 5b cm³/1000 strokes	idie switchir	. •	Torque- travel	control 5 Control rod travel
1	2	3	4	5	6	7	8	9
1400	59,0-60,0 (57,0-62,0)	1440-1450*	400	44,0-46,0 (42,0-48,0)	100	71,0-81,0 (58,0-84,0	1400 400 600 1000	10,5+0 11,4+0 11,1+0 10,8+0
			ļ		2	220 (240)		

Checking values in brackets

^{* 1} mm less control rod travel than col. 2

WPP 001/4 MB 3,8 n 10

1. Edition

PES 4 A 90 D 410 RS 2570 Komb.-Nr. 0 400 874 237

RSV 350-1300 A 2 B 1126-2 L

supersedeDaimler-Benz company OM 314

engine 55 kW

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

Testoil-ISO 4113

(2,20-2,40)

mm (from BDC)

Rotational speed	Control rod	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)	
rev/min	mm 2	cm ³ /100 strokes	cm³/ 100 strokes	mm 2	cm ¹ /100 strokes	mm 6	
1300	11,2+0,1	6,5-6,6	0,3(0,45)		*		
350	8,9-9,1		0,2(0,4)				
330			,				

Adjust the fuel delivery from each outlet according to the values in C

B. Governor Settings

	r rated speed		Interme	Intermediate rated speed			Lower	rated speed Control rod	3 Torque control	
Degree of deflection of control	Control rod travel	Control rod travel . mm rev/min	<u> </u>			Control- lever deflection	rev/min	travel mm	t6A\wiu	travel mm
lever	2	3	4	5	6	in degrees 7	8	9	10	11
loose .	800	0,3-1,0		_			350	8,5	1300	11,2-11,3
10036	x =	: 4,0					100 350	min.19,5 8,9-9,1	500 700	11,9-12,1 11,5-11,8
ca. 46	10,2 4,0 1550	1340-1350 1420-1450 0,3-1,7					595-65		700	

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

(4)	il-load stop	6 Rotational- speed limitat	Rotational-speed limitat 3a Fuel delivery characteristics			uel delivery 5	4a) Idle stop		
rev/min	cm ³ /1000 strokes	Note: changed to) rev/min 3	rev/min	cm ³ /1000 strokes 5	rev/min 6	cm³/1000 strokes 7	rev/min 8	travel mm 9	
1300	65,0-66,0. (63,0-68,0)	1340-1350*	500	53,0-57,0 (51,0-59,0)	100	78,0-88,0 (75,0-91,0	350	8,5 **	
								·	

Checking values in brackets

* 1 mm less control rod travel than col. 2

** Adjusting the idle-speed auxiliary spring

Geschäftsbereich KH. Kundendienst. Kfz-Ausfrüstung.

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moritime en République Fédérale d'Allemagne per Robert Bosch GmbH.

6.83

estoil-ISO 4113

Test Specifications Fuel Injection Pumps and Governors

WPP 001/4 DAF 8.3 n 1 2. Edition

En

PE 6 A 95 D 410 RS 2575

RSV 250-1200 A5B 2151 L

supersedes8.82

Komb.-Nr. 0 400 676 171

company: DAF

DH 825 engine:

Specifications apply to test tubing 1 680 750 015 See Service Information VDT-I-DAF 004.

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings 2,0 - 2,1

ort closing at pres		(1.95-2.15)				
Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-con/, b) valve)
rev/min	mm	cm ³ /100 strokes	100 strokes	mm	cm ³ /100 strokes	mm
1	2	3	4	2	3	6
1200	10,4+0,1	7,3 - 7,5	0,35(0,6			
250	6,0-6,2	0,7 - 1,1	0,35(0,5	5)		
					•	
				İ		
1		ļ		1		
	1	1		<u> </u>		

Adjust the fuel delivery from each outlet according to the values in [

B. Governor Settings

Upper Degree of deflection of control lever	rated speed rev/min 2	Control rod travel mm 3	Intermediate Degree of deflection of control lever	rated spe rev/min 5	ed Control rod travel mm 6	Degree of deflection of control lever	rated spe rev/min 8	ed Control rod travel mm	3 Tor	que control Control rod travel mm
loose	800 X =	0,3 - 1,0 5,0	•	•	-	ca. 24	250 250 635-6	5,0 6,0-6,2 95 = 2,0	500 800	10,5+0, 11,1+0, 11,1+0, 10,7+0,
5a.58	9,4 4,0 1505	1240-1250 1340-1370 0,3-1,7							940	10,710,

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2 Full-to	ad stop	I(O) NOWNOND KODY CO. CO. CO.			Starting Idle	fuel delivery	Sa) Idle stop		
Test oil tem rev/min 1	cm ² /1000 strokes	Note: changed to rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min	cm³/1000 strokes 7	rev/min 8	Control rod travel mm 9	
1200	73,0-75,0 (71,0-77,0)	1240-1250*	800	74,5-77,5 (72,0-80,0)	100	121,5-131,5 bei 19,5- 21,0 mm RW			

Checking values in brackets

1 1 mm less control rod travel than col. 2

WPP 001/4 DAF 8,3 n 2

1. Edition

En

PE 6 A 95 D 410 RS 2575 Y

RSV 250-750 A 7 B 2124 L

Komb.-Nr. 0 400 676 172

supersedes DAF company **DHTD 825** engine

Specifications apply to test tubing 1 680 750 015 All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

mm (from BOSC) RW = 7,5 mm

Rotational speed rev/min	Control rod travel	Fuel delivery cm³/100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) imm
750	12,5+0,1	10,1-10,3	0,4(0,6)			

Adjust the fuel delivery from each outlet according to the values in

POrt closing difference between control.rod travel 9 mm B. Governor Settings and max. = 3 - 4° camshaft

11 1	r rated speed Control rod travel mm		interm	ediate rated	speed 6	Control- lever deflection in degrees 7	Lowe rev/min 8	rated speed Control rod travel mm	rev/min	rque control Control rod travel mm
lose	800	0,3-1,0	-	-	-	ca. 19	250	6,1	-	-
	x =	4,25					250	6,0-6,2 20=2,0		
ca. 45	11,5 4,0 995	770-780 795-815 0,3-1,7					200-3	**		-

Set idle-speed auxiliary spring at 2,0 mm control-rod travel,
The numbers denote the sequence of the test then 1/2 turn back.

C. Settings for Fuel Injection Pump with Fitted Governor

(2b) Fu	ill-load stop	6 Rotational- speed limitat		iel delivery jaracteristics	Starting for	uel delivery 5		e stop
Test on to rev/min	emp. 40°C (104°F) cm³/1000 strokes 2	Note: changed to) rev/min 3	rev/min	cm ³ /1000 strokes 5	rev/min	cm³/1000 strokes 7		Control rod travel mm 9
750	100,5-102,5 (98,5-104,5)	770-780*	-	· -	100	19,5-21,0 mm RW	•	-

Checking values in brackets

WPP 001/4 KHD 6,1 K 2

3. Edition

____5

PES 6 A 85 D 410 RS 2592

RQV 300-1250 AB 1158 L

supersedes 83 company: KHD

Komb.-Nr. 0 400 846 497

engine: BF 6 L 913 GMC-Fahrzeug 118 kW (160 PS) / 2500 min-1

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
mm 2	cm³/100 strokes 3	cm"/ 100 strokes 4	mm 2	cm ³ /100 strokes 3	mm 6
12,5+0,1	8,4-8,5	0,3 (0,45)			
8,3-8,5	1,0-1,6	0,2(0,4)			
	mm 2 12,5+0,1	mm cm³/100 strokes 2 3 12,5+0,1 8,4-8,5	mm cm³/100 strokes 2 cm²/ 100 strokes 4 12,5+0,1 8,4-8,5 0,3 (0,45)	mm cm³/100 strokes 2 cm²/ 100 strokes 4 cm²/ 100 strokes 2 12,5+0,1 8,4-8,5 0,3 (0,45)	mm cm³/100 strokes 2 12,5+0,1 8,4-8,5 0,3 (0,45)

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Testoil-ISO 4113

Upper rated s	peed			Intermediate	rated sp	eed .	Lower rated	speed		Sliding s	leeve travel
deflection	Control rod travel	Control rod travel mm rev/min	(a) (2a)	Degree of deflection of control lever	rev/min	Control rod travel mm 4	Degree of deflection of control lever	rev/min	Control rod travel mm 3	rev/min 10	(1) mm 11
max.	1290	15,2-17,	,8	-	-	-	ca.17		min.10,2 8,3-8,5	580	0,5-0,8 3,6-3,7
ca. 66		1290-130 1375-140 0 - 1					450-575			920 1250	5,3-5,4 8,1
							39				

Torque control travel a =

mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load d Control-ro Test oil ter		Rotational-speed 20 limitation intermediate speed	Fuel deliv	very characteristics 58 poeed 50	Starting Idie switchir	•	Torque- travel	Control cod
rev/min	cm³/1000 strokes	rev/min 49	rev/min	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	
LDA 1250	0,7 bar 83,5-84,5	1290-1300*	LDA 800	0,7 bar 80,5-82,5 78,0-85,0)	100	102,0-112,0 (99,0-115,0) = 16,9-17,3 mm RW	500 800 1000	12,5+0, 13,2+0, 13,2+0, 12,9+0,
	(81,5-86,5)	·	LDA 500	0 bar 59,0-61,0 56,5-63.5)		!	1100	12,7+0,

Checking values in brackets

* 1 mm less control rod travel than col. 2

9.83

BOSCH

KHD 6,1 k 2

Testat n =

500 rev/min decreasing pressure - in bar gauge pressure

Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1) .
PES 6 ARS 2592	0,70		13,2 - 13,3
+ RQVAB 1158 L		0	11,8 - 11,9
		0,48	12,8 - 12,9
		0,33	11,9 - 12,1

Notes:

(1) when n =

rev/min and gauge pressure =

bar (= maximum full-load control rod travel)

WPP 001/4 KHD 6,1 k 3

2. Edition

Εn

PES 6 A 85 D 10/3 RS 2592

RQV 300-1250 AB 1188 L

Komb.-Nr. 0 400 836 028

supersedes 83 KHD companyBF 6 L 913 engine 118 kW/2500 min-1

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing et pres	troke	2,2 - 2,3 2,15-2,35)	mm (from BDC)			
Rotational speed	Control rod	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min 1	mm 2	cm ³ /100 strokes 3	cm³/ 100 strokes 4	mm 2	cm ³ /100 strokes 3	mm 6
1250	12,0+0,1	8,9-9,0	0,3(0,5)			
300	6,9-7,1	0,9-1,5	0,25(0,4	5)		

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated s	speed			Intermediate	rated spe	1 .		Lower rated	speed t	l		Sliding sleeve travel	
Degree of deflection of control lever	rev/min Control rod travel mm	Control rod travel mm rev/min		Degree of deflection of control lever	rev/min 5	Control re travel mm 6	od (Degree of deflection of control lever	rev/min 8	Control re travel mm 9	3	rev/min 10	mm 11
max.	1290	15,2-17	,8	-	-	-	. -	ca. 13	300	6,9-	7,1	325 850	1,5-1,7 4,9-5,1
ca. 65	11,0	1290-13 1375-14						355-470				1150 1400	7,1-7,3 9,9
'								3a					

Torque control travel a = 0,8 mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load d Control-ro Test oil ter		Rotational-speed 20 limitation intermediate speed	Fuel deliv	rery characteristics (58)	Starting Idle switchin	•	Torque- travel	Control vod
rev/min	cm³/1000 strokes .	rev/min 48	rev/min	cm ³ /1000 strokes 5	rev/min	cm ³ /1000 strokes 7	rev/min 8	
LDA 1250	0,7 bar 88,5-89,5 (86,5-91,5)	1290-1300*	LDA 500	0,7 bar 73,0-75,0 (70,5-77,5) 0 bar 59,0-61,0 (57,0-63,0)	100	110,0-120,0 (107,0-123,0 =17,1-17,5 mm RW	500 775	12,0+0, 12,8+0, 12,5+0, 12,1+0,

Checking values in brackets

Testatn =

rev/min decreasing pressure ~ in bar gauge pressure

KHD 6,1 k 3

Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1)
?ES 6 ARS 2592 + RQVAB 1188 L	0,70	0 0,26 0,19	12,8-12,9 10,9-11,1 12,4-12,5 11,9-12,1

Notes

(1) when n =

rev/min and gauge pressure =

bar (= maximum full-load control rod travel)

WPP 001/4 MB 5,7 v 11 2. Edition

PES 6 A 90 D 410 RS 2596 Komb.-Nr. 0 400 876 293

RSV 350-1400 AOB 1141 L

supersedes8.82

company Daimler-Benz

OM 352 A engine

123 kW (157 PS) Schmidt rotary

snow plough for high altitudes

A. Fuel Injection Pump Settings

Port closing at prestroke

Testoil-ISO 4113

2,0-2,1

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

mm (from BDC)

Rotational speed	Control rod	Fuel delivery	Difference	Control rod	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm (2)	cm3/100 strokes	cm³/ 100 strokes	mm	cm³/100 strokes	mm
1	2	3	4	2	3	6
1380	12,3+0,1	7,9-8,0	0,3(0,45)	9,8-9,9	5,4-5,6	
350	7,9-8,1	0,9-1,5	0,2(0,4)	7,9-8,1	0,9-1,5	
		·				

Adjust the fuel delivery from each outlet according to the values in $\widehat{\mathbf{L}}$

B. Governor Settings

(1) Uppe	r rated speed	rev/min	Interm	ediate rat	ed speed	4	Lower	rated speed	3 Torque control		
Degree of deflection of control lever	Control rod travel mm	Control rod travel mm rev/min 3	4	5	6	Control- tever deflection in degrees 7	rev/min 8	Control rod Iravel mm 9	rev/min	Control rod travel mm	
loose	800	0,3-1,0		-	_	max.14					
	x =	5,75					350 580-640	7,9-8,1 = 2,0			
ca.60	11,3 4,0 1680	1420-1430 1520-1550 0,3-1,7					560-040	- 2,0			

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2b Fu	uli-load stop	6 Rotational- speed limitat		uel delivery paracteristics	Starting t	fuel delivery 5	4a Idle stop	
Test oil temp 40°C (104°F) rev/min cm³/1000 strokes 1 2		Note: changed to) rev/min 3	rev/min	cm ³ /1000 strokes	rev/min	cm³/1000 strokes	rev/min 8	Control rod travel mm
LDA 1380	(1) 0,7 bar 79,0-80,0 (77,0-82,0)	1420-1430*	LDA 600 LDA 500	0,7 bar 76,5-79,5 (74,5-81,5) 0 bar 51,5-52,5 (49,5-54,5)	100	78,0-88,0 16,4 - 16,8 mm RW	-	-

Checking values in brackets

* 1 mm less control rod travel than col 2

811

B. Governor Settings

	r rated speed	rev/min	Interme	diate rated	speed	0	Lower	rated speed [Control rod	(9)	rque controi Control rod
Degree of deflection of control	travel mm	travel				Control- lever deflection	rev/min	trayel mm	rev/min	ww tre-c ₁
lever 1	2	3	4	5	6	in degrees 7	8	9	10	11
loose	800	0,3-1,0	-	-	-	ca.31	350	8,0	1200	9,8-10,0
	х	6,0					100 350	19,0-21,0 7,9-8,1	650	11,3-11,5
ca.74	8,8 4,0 1635	1440-1450 1470-1500 0,3-1,7					440 - 600	490 = 2,0 0,3-1,0		

C. Settings for Fuel Injection Pump with Fitted Governor

2b) F(ill-load stop	6 Rotational- speed limitat		iel delivery paracteristics	Starting t	fuel delivary 5	4a Idle stop	
Test oil temp. 40°C (104°F) rev/min cm³/1000 strokes 1 2		Note: changed to) rev/min 3	rev/min	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm 9
(2) LDA 1380	0,7 bar 54,5-56,5 (52,5-58,5)	1440-1450*	LDA 1000 600 LDA 500	0,7 bar 60,2-62,2 (58,2-64,2) 65,2-67,2 (63,2 69,2) 0 bar 53,0-55,0	300	78,0-88,0 16,4 - 16,8 mm RW	-	-

Checking values in brackets

(51.0-57,0)

* 1 mm less control rod travel than col. 2

Testoil-ISO 4113

D. Adjustment Test for Manifold Pressure Compensator

Testatn =

500

rev/min decreasing pressure - in bar gauge pressure

Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1)
PES 6 A RS 2596 (1)	0,52	0,70 0 0,21	13,3 - 13,4 11,4 - 11,5 13,0 - 13,1 11,8 - 12,0
(2)	0,52	0,70 0 0,21	12,3 - 12,4 10,4 - 11,5 12,0 - 12,1 10,8 - 11,0

Notes:

(1) when n =

rev/min and gauge pressure =

bar (= maximum full-load control rod travel)

En Testing the hydraulic start-locking device

Locking at Unlocking at

0,45 - 0,55 bar 0,25 - 0,35 bar

WPP 001/4 MB 5,7 v 12

2. Edition

PES 6 A 90 D 410 RS 2596

RSV 350-1200 AOB 1148 L

En

supersedes company

8.82 Daimler-Benz OM 352 A

Komb.-Nr. 0 400 876 310

engine

110 kW (150 PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

Festoil-ISO 4113

2,0-2,1 (1.95-2.15)

mm (from BDC)

RW 9,0-12,0 mm

Rotational	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre tensioning (torque control valve)
rev/min	mm (2)	cm³/100 strokes	cm³/ 100 strokes	mm	cm³/100 strokes	mm
1	2	3	4	2	3	6
1200	12,2+0,1	7,4-7,5	0,3(0,45)			
350	8,1-8,3	0,9-1,5	0,2(0,4)			
,		ļ				
1						

Adjust the fuel delivery from each outlet according to the values in

B. Giovernor Settings

Degree of deflection of control lever	crated speed Control rod travel mm	Control rod travel mm rev/min	Intermediate rated speed		Control- lever deflection in degrees	Control- lever deflection rev/min mn		trol rod Control travel		
loose	800 x =	0,3-1,0 5,0	-		<u>-</u>	ca.27	100	min.19,0	1200 600	12,2-12,3
ca.62	11,2 4,0 1500	1240-1250 1385-1415 0,3-1,7					350 500 -	8,1-8,3 560=2,0	950	12,6-12,9

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

(2b) F.	ill-load stop	6 Rotational- speed limitat	8.25	el delivery aracteristics	Starting f	uel delivery 5	48 Idle stop	
i e	emp. 40°C (104°F) cm³/1000 strokes 2	Note changed to) rev/min 3	rev/min	cm ² /1000 strokes 5	rev/min	cm³/1000 strokes 7	rev/min 8	Control rod travel mm 9
LDA 1200	0,7 bar 74,0-75,0 (72,0-77,0)	1240-1250*	LDA 600 LDA 500	0,7 bar 73,0-75,0 (71,0-77,0) 0 bar 52,0-53,0 (50,0-55,0)	100	78,0-88,0 16,1- 16,5mmRW	1	-

Checking values in brackets

* 1 mm less control rod travel than col. 2

6.83

Geschaftsbereich KH. Kundendienst Kfz-Ausrustung c. 1980 by Robert Bosch GmbH, Postfach 50, D-7000 Stuttgart 1. Printed in the Federal Republic of Germany Imprime en République Fédérale d'Allemagne par Robert Bosch GmbH.

rev/min decreasing pressure - in bar gauge pressure Testat n = 500

MB 5,7 v 12

Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gange pressure = bar	Gauge pressure = bar	mm (1)
PES 6 ARS 2596		0,70	13,2 - 13,3
withA0B 1148 L		0	11,5 - 11,6
	0,45		12,8 - 12,9
		0,24	12,2 - 12,1

Notes

(1) when n =

rev/min and gauge pressure =

bar (maximum full-load control rod travel)

Testing the hydraulic start-locking device

Locking at

Unlocking at

0,75 - 0,85 bar 0,25 - 0,35 bar

40

WPP 001/4 MB $5,7 \times 3$

2. Edition

En

PES 6 A 90 D 410 RS 2596

Komb.-Nr. 0 400 876 313

RSV 350-1400 A0B 1148 L

supersedes

company

8.82 Daimler-Benz

engine

OM 352 A 115 kW (156 PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

Testoil-ISO 4113

(1,95-2,15) 2,00-2,10

mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Oifference cm³/ 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1380	11,3+0,1	7,1-7,2	0,3(0,45)			
350	7,9+0,2	0,9-1,5	0,2(0,4)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Degree of deflection of control lever	Control rod travel mm	rev/min Control rod travel mm rev/min	Intermed	diate rated	speed	Control- lever deflection in degrees	Lower rev/min 8	raled speed Control rod travel mm	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	rque control Control rod travel mm
loose	800 x =	0,3-1,0 5,0	-	<u>-</u>	<u>-</u>	ca.21	350 100 350	7,5 min.19 7,9-8,1	1380 800 1200	11,3+0,1 12,3+0,1 11,6+0,1
ca.64	1430 - 1510 - 1620 =						530 -	590= 2,0		11,070,1

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

	ill-load stop emp 40°C (104°F)	Rotational- speed limitat	11.36	el delivery aracteristics	Starting f	uel delivery 5	da tale stop [Control rod	
rev/min	cm³/1000 strakes 2	changed to) rev/min 3	rev/min 4	cm ² /1000 strokes 5	rev/min	cm³/1000 strokes 7	rev/min 8	travel mm 9
L DA 1380	0,7 bar 71,0-72,0 (69,0-74,0)	1430-1440*	LDA 700 LDA 500	0,7 bar 67,0-69,0 (64,5-71,5) 0 bar 58,0-59,0 (56,0-61,0)	100	78,0-88,0 15,6 - 16,0 mm RW		

Checking values in brackets

* 1 mm less control rod travel than col. 2

6.83

BOSCH

Geschaftsbereich KH Kundendienst Kfz-Ausrustung (1980 by Robert Bosch GmbH, Postfach SO, 0-7000 Stuttgart 1 Printed in the Federal Republic of Germany Imprimé en République Fédérale d'Altemagne par Robert Bosch GmbH

522

Test at n =

rev/min decreasing pressure – in bar gauge pressure

MB 5,3 x 3 -2-

Testoil-ISO 4113

Pump/governor	Setting	Measurement	diminution Control rod travel difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1)
RS 2596 with			
AOB 1148 L	0,70		12,3 - 12,4
7.00 1140 2		0	11,8 - 11,9
		0,38	12,0 - 12,1

Notes

(1) when n =

rev/m/h and gauge pressure =

bar (" maximum full-load control rod travel)

Testing the hydraulic start-locking device

Locking at

0,40 - 0,50 bar 0,25 - 0,35 bar

Unlocking at

MPP 001/4 MAN 15,0d

2. Edition

PE 10A 95D 520/5 LS 2604 RQV 250-1150 AB1104 R Komb.-Nr. 0 400 649 221

compa#AN

10 - 9 - 4 - 1 - 8 - 7 - 6 - 3 - 5 - 20 - 45 - 72 - 117 - 144 - 189 - 216 - 261 - 288 - 333° ± 0,5° (±0,75°) engiry 2840 MF 268kw (364 PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings (1,65-1,85)

Port closing at pres		1.70-1.80	mm (from BDC)2	yl. 10;	RW=9.0-12.0	
Rotational speed	Control rod	Fuel del@ary	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (forque-control valve)
rev/min	mm 2	cm ³ /100 strokes	cm³/ 100 strokes 4	mm 2	cm ³ /100 strclies 3	mm 6
1150	13,0+0,	12,5-12,7	0,3(0,6)		,	
250	6,9-7,1	0,9 - 1,5	0,3(0,5)			

Adjust the fuel delivery from each outlet according to the values in

Testoil-ISO 4113

B. Governor Settings

Upper rated s	speed		Intermediate	rated sp	ed	Lower rated	speed		Sliding s	levent eveel
	rev/min Controi rod travel mm	travel	Degree of deflection of control lever	rev/min 5	Control rod travel	Dogree of deflection of control lever 7	rev/min 8	Control rod travel mm 3	rev/min 10	(1) mm 11
max.	1150	15,2-17,8	-	-		ca.12	100 250	min.8,5 6,9-7,1	520	0,5-0,7
ca.66	12,0 4,0 1355	1190-1200 1280-1310 0 - 1,0				3.0			830 1150	5,8-6,1 7,8

Torque control travel a =

WL1

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-roc Test oil tem	atop	Rotational-speed 20 limitation intermediate speed			Starting idle switching	. 0	Torque- travel	control 5 Control rad travel
rev/min	. •	rev/min 4a	rəv/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	
1150	124, 5-126, 5 (122, 5-128, 5	1190-1200*	650 500	113,5-117,5 (111,5-119,5) max. 118,5 (max.120,5)	B .	15,9-16,5 mm RW	500 1010	13,0+0, 13,5+0, 13,4+0, 13,0+0,

Checking values in brackets

Festoil-ISO 4113

WPP 001/4 KHD 1 g 6

3. Edition

RSV 325-1150 A 8 B 2102 L PES 4 A 85 D 410/3 RS 2610

1 - 3 - 4 - 2 je $90^{\circ} \pm 0.5^{\circ}$ ($\pm 0.75^{\circ}$)

Komb.-Nr. 0 400 864 051

A 8 C 2102 L

supersedes 6.83

KHD company:

engine:

F 4 L 913 55 kW (75 PS)

Schlepper D 7807 -

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

mm (from BDC)

	Rotational speed	Control rod travel	Fuel delivery		Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
	rev/min	mm 2	cm ³ /100 strokes	cm ³ / 100 strokes 4	mm 2	cm ³ /100 strokes	mm 6
	1150	11,3+0,1	6,8 - 6,9	0,3(0,45)			
ļ	325	8,7-8,9	0,9 - 1,5	0,25(0,4	5)		
						·	

Adjust the fuel delivery from each outlet according to the values in [

B. Governor Settings

Jpper	rated speed		Intermediate	rated spe	ed	4 Lower	r rated spe	ed	3 Tor	que control
Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel	Degree of deflection of control lever	rev/min	Control rod travel mm	rev/min	Control rod travel
1	2	3	4	5	6	7	8	9	10	11
loose	800	0,3-1,0				ca.17	325	8,3	1150	1,3-11,4
	×	= 3,5					325	8,7-8,9 320 = 2,0	900 500	1,6-11,9 2,1-12,2
ca.54	1190- 1230- 1400	1200 = 10,3 1260 = 4,0 = 0,3-1,7					460-	20 = 2,0		

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2 Full-to	pad stop	6 Rotational- speed limitat.		el delivery aracteristics	Starting Idle	fuel delivery	Sa) Idle	e stop
Test oil temp. 40°C (104°F) rev/min cm³/1000 strokes 1 2		Note: changed to rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min	cm³/1000 strokes 7	rev/min 8	Control rod travel mm 9
1150	68,0 - 69,0 (66,0 - 71,0)	1190-1200*	500 800	57,5 - 59,5 (55,5 - 61,5) 64,5 - 66,5 (62,5 - 68,5)		-		-

Checking values in brackets

WPP 001/4 KHD 1 g 8 2. Edition

En

PES 4 A 85 D 410/3 RS 2610

RSV 325-1150 A 8 B 2163 L

supersedes 10.82

Komb.-Nr. 0 400 864 055

company KHD engine

F 4 L 913 55 kW (75 PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

2300 min⁻¹ DX 80 tractor

A. Fuel Injection Pump Settings

Port closing at prestroke

Festoil-ISO 4113

2,5-2,6 (2,45-2,65)

mm (from BDC).

Rotational speed rev/min	Control rod travel	Fuel delivery cm ³ /100 strokes 3	Difference cm³/ 100 strokes 4	Control rod travel mm	Fuel delivery cm³/100 strokes 3	Spring pre-tensioning (forque-control valve) mm 6
1150	11,3+0,1	6,8-6,9	0,3(0,45)			
325	9,1-9,3	1,5-1,9	0,2(0,4)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

1 Uppe	r rated speed		Interme	ediale rated	d speed	4	Lower	rated speed	3 Torque control		
Degree of deflection of control lever	Control rod travel mm	Control rod travel mm rev/min 3	4	5	6	Control- lever deflection in degrees 7	rev/min	Control rod travel mm 9	rev/min	Control rod travel mm	
loose	800	0,3-1,0	-	-	-	ca.19	325	8,7	1150	11,3+0,1	
	x =	4,5					100	min.19,0	500	12,1+0,1	
ca.55	10,3 4,0 1400	1190-1200 1245-1275 0,3-1,7					325 470 -	9,1-9,3 530 =2,0	900	11,6+0,2	

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

	ull-load stop emp. 40°C (104°F)	Rotational- speed limitat 3a Fuel delivery characteristics			Starting fuel delivery 5 4a Idle stop			
rev/min	cm ³ /1000 strokes	changed to) rev/min 3	rev/min 4	cm ⁹ /1000 strokes 5	rev/min	cm³/1000 strokes	rev/min 8	Control rod travel mm 9
1150	68,0-69,0 (66,0-71,0)	1 190-1200*	500	58,0-61,0 (55,5-63,5)	-	-	-	-

Checking values in brackets

WPP 001/4 SCL 9,8 a 1 2. Edition

PE 8 A 95 D 410 RS 2615

RSV 325-1025 A1B 2177 L

supersedes company

9.82 Schlüter

1 - 4 - 7 - 6 - 8 - 5 - 2 - 3 je $45^{\circ} \pm 0.5^{\circ} (\pm 0.75^{\circ})$

engine

SDMT 110/112 W 8 136 kW (185 PS)

Komb.-Nr. 0 400 678 042

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

estoil-ISO 4113

2,0-2,1 (1,95-2,25)

mm (from BDC)

bei RW = 9,0 - 12,0

Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm 2	cm³/100 strokes	cm³/ 100 strokes 4	mm 2	cm³/100 strokes	mm 6
1025	12,7+0,1	10,2-10,4	0,3(0,6)			
325	8,4-8,6	1,4-2,1	0,3(0,5)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

	r rated speed Control rod travel mm	i	Interme	diate rated	speed	Control- lever deflection in degrees 7		rated speed Control rod travel mm	(3)	rque control Control rud travel mm
loose	800 x =	0,3-1,0 5,0	-	<u>-</u>	-	ca.27	325 100	8,0 min.19,5	1025 500	12,7+0,1
ca.57	11,7 4,0 1330	1065-1075 1165-1195 0,3-1,7					325 590 -	8,4-8,6 650 = 2,0	795	12,8+0,2

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

(2b) Fu	ill-load stop	6 Rotational- speed limitat	uel delivery paracteristics	Starting fuel delivery 5			4a Idle stop	
Test oil temp 40°C (104°F) rev/min cm³/1000 strokes 1 2		Note changed to) rev/min 3	rev/min	cm ⁹ /1000 strokes 5	rev/min	cm³/1000 strakes		Control rod travel mm 9
LDA 1025	0,7 bar 102,5-104,5 (100,5-106,5)	1065-1075*	LDA 700 LDA 500	0,7 bar 103,5-106,5 (101,5-108,5) 0 bar 73,5-76,5 (71,5-78,5)	100	171,5-181,5 / 19,5- 21,0mm RW	-	-

Checking values in brackets

* 1 mm less control rod travel than col 2

6.83

Geschaftsbereich KH. Kundendienst. Kfz-Ausrustung. 4. 1980 by Robert Bosch GmbH. Postfach 50, D-7000 Stuttgart 1. Printed in the Federal Republic of Germany Imprime en République Fédérale d'Allemagne par Robert Bosch GmbH.

Test at n =

בטט

rev/min decreasing pressure - in bar gauge pressure

SCL 9.8 a 1

-2-

Testoil-ISO 4113

500	nicreasing		3CL 9,0 a 1
Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1) .
PE8ARS 2615 withA1B2177L	0,32	0,70 0 0,18	12,9-13,0 13,1-13,2 12,0-12,1 12,3-12,5

Notes:

(1) when n =

rev/min and gauge pressure = bar (= maximum full-load control rod travel)

Testing the hydraulic start-locking device

Locking at Unlocking at

0,4 - 0,5 bar 0,15 - 0,25 bar

[estoil-150 4113

Test Specifications Fuel Injection Pumps 1 and Governors

WPP 001/4 MAN 18.2 a

1. Edition

PE 10 A 95 D 520/5 LS 2623

Komb.-Nr. 0 400 649 225

ROV 250-1150 AB 1150 R

supersades companyMAN D 2840 MF 268 kW (364 PS)

1 - 8 - 7 - 6 - 3 - 5 - 2 - 10 - 9 - 4 $0 - 27 - 72 - 99 - 144 - 171 - 216 - 243 - 288 - 315^{\circ} + 0.5^{\circ}(+0.75^{\circ})$

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Cm ³ / 100 strokes	Control rod travel mm 2	Fuel delivory cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm
1150	13,0+0,1	12,5-12,7	0,3(0,6)			
250	7,9-8,1	0,9-1,5	0,3(0,5)			
						į

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated s	peed			Intermediate	rated sp	eed	Lowerrat	ed speed		Sliding s	ieeve travel
	rev/min Control rod travel	Control rod travel		Degree of deflection of control		Control rod travel	Degree of deflection of control	· [Control rod travel		1
lever		rev/min	(2a)	lever	rev/min	mm (4	lever	rev/min	[mm (3)	rev/min	mm
1	2	3	_	4	5	6	7	88	9	10	11
max.	1230	15,2-17	7,8	-	-	-	ca. 12	100	min. 8,5		0,6-0,8
				Ī		Ì	i	250	7,9-8,1	520	4,6-4,9
ca. 63	12,0	1190-12	200			ļ	1	410-	470= 2,0	830	5,8-6,1
	4,5	1290-13			1	ļ			,	1150	7,8
	1355	_	1,0	1							
1				•	i					Į	
1							3	1		1	ĺ

0.5 mm Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Futl-load delivery Control-rod stop Test oil temp. 40°C (104°F) 2 rev/min cm³/1000 strokes		Rotational-speed (2b) Fuel delivery high idle speed rev/min (4a) rev/min cn				. •	Torque- travel	Control od travel
1150	2	з 1190-1200*	4 650 500	113,5~117,5 (111,5-119,5 max. 118,5	6 100)	7	8 1150 500	13,0+0, 13,5+0, 13,4+0,
				(max. 120,5)			1080	13,0+0,

Checking values in brackets

D:AJUSTMENT TEST - ALTITUDE-PRESSURE COMPENSATOR

MAN 18,2 a

Test at n =

500

rev/min decreasing pressure - in bar gauge pressure

Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1) .
PE 10 ALS 2623	. 0,68		10,8 - 11,6
+ RQVAB 1150 R		0,95-0,93	13,5 - 13,6
		0,91	13,0 - 13,3
		0,52	10,4 - 10,7

Notes.

(1) when n =

rev/min and gauge pressure =

bar (= maximum full-load control rod travel)

WPP 001/4 KHD 1 o

2. Edition

En

PES 6 A 95 D 410 RS 2625

Komb.-Nr. 0 400 876 305

RSV 325-1150 A8B 674 DL

supersedes 2.82

company:

engine.

B F 6 L 913 B

Bagger

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

Festoil-ISO 4113

mm (from BDC)

Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm	cm ³ /100 strokes	cm ³ / 100 strokes 4	mm 2	cm ³ /100 strokes	mm 6
1150	11,4+0,1	8,3 - 8,4	0,3(0,6)			
325	7,2-7,4	1,6-2,2	0,3(0,5)			
					·	

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper	rated speed		Intermediate	rated spe	ed	4 Lowe	r rated spe		(3) To	que control
Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	10	111
loose	800	0,3-1,0	•	•	-	ca. 15	325	6,8	1150 500	11,4+0 12,2+0
	X =	3,0					100 325	min. 7,2-7,4	1000	11,7+0
ca. 4 7	10,4 4,0 1325	1190-1200 1205-1235 0,3 - 1,7					615-6			

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2 Full-lo	ad stop				Starting Idle	fuel delivery	(5a) idle stop	
rev/min cm³/1000 strokes 2		Note: changed to rev/min 3	rev/min cm³/1000 strokes 4 5		rev/min cm³/1000 strokes 6 7		rev/min 8	Control rod travel mm 9
LDA 1150	0,7 bar 81,0 - 83,0 (79,0 - 85,0)	1190-1200*	LDA 800 LDA 500	0,7 bar 83,0-86,0 (80,5-88,5) 0 bar 56,5-59,5 (54,5-61,5)	100	116,5-126,5 (113,5-129, = 15,9 - 16,4 mm RW	5)	

Checking values in brackets

Test at n =

500

rev/min decreasing pressure – in bar gauge pressure

KHD 1 o

-2-

Testoil-ISO 4113

500	increasing		KMU I 0 -2-
Pump/governor	Setting	Measurement	diminution , Control rod travel- difference
	Gauge prossure = bar	Gauge pressure = bar	mm (1) .
PES 6 ARS 2625	0,7		12,2 - 12,3
with A8B 674 DL		0	10,8 - 10,9
		0,36	11,9 - 12,0
		0,2	11,0 - 11,2

Notes

(1) when n =

rev/min and gauge pressure =

bar (= maximum full-load control rod travel)

WPP 001/4 EIC 2,9 b 1

1. Edition

PES 3 A 90 D 320 RS 2626

RSV 300-1000 A 1 B 2171-2 R

supersede Eicher company EDL 3-4

Komb.-Nr. 0 400 873 033

engine. 49 kW

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

(2, 16-2, 35), mm (from 80%) RW = 9,0-12,0 mm

Rotational speed rev/min	Control rod travel	Fuel delivery cm³/100 strokes 3	Difference cm ² / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1000	12,4+0,1	8,2-8,3	0,2(0,45)			
300	9,0-9,2	2,5-3,1	0,2(0,4)			
						·
				<u> </u>		

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

	r rated speed		interme	diate rated	speed	(4)	Lower	rated speed	Torque control	
Degree of deflection of control lever	Control rod travel mm	Control rod travel mm rev/min				Control- lever deflection in degrees	rev/min	Control rod travel mm	rev/min	travel mm
1	2	3	14	5	6	<u> </u>	0	3		
loose	800	0,3-1,0	-	•	-	ca. 19	300	8,6	1000	12,4-12,5
10032	x =	= 5,75					100 300	min.19, 9,0-9,2		
ca. 48	11,4 4,0 1275	1040-1050 1085-1115 0,3-1,7				395-45		3,0 3,0		

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

(2b) Fu	II-load stop	6 Rotational- speed limitat				uel delivery (5)	(4a) Idle stop		
Test oil to	cmp. 40°C (104°F) cm ³ /1000 strokes 2	Note: changed to) rev/min 3	rev/min 4	cm³/1000 strokes 5	rev/min 6	cm³/1000 strokes 7	rev/min 8	travel mm	
1000	82,0-83,0 (80,0-85,0)	1040-1050*	500	82,0-85,0 (80,0-87,0)	100	130,0-140 (127,0-143 =19,5- 21,0 mm RW	,0 - ,0)		

Checking values in brackets

40

WPP 001/4 EIC 2,9 c 3
1. Edition

En

PES 3 A 90 D 320 RS 2626

RSV 300-1050 A 1 B 2171-3 R

supersedes Eicher company:

Komb.-Nr. 0 400 873 034

company: engine: EDL 3-8 A1 kW

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

2,2 - 2,3 (2,15-2,35)

mm (from BDC)

Rotational spead ray/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Oitterence cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1050	10,4+0,1	7,1 - 7,2	0,25(0,5)			_
300	8,3-8,5	2,0 - 3,0	0,2(0,45)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

	r rated speed	rev/min	Intermediate rated speed			Lower rated speed			Torque control	
Degree of deflection of control lever	Control rod travel mm	Control rod travel mm rev/min	a	5	6	Control- lever deflection in degrees 7	rev/min	Control rod travel mm	rev/min	travel mm
loose	800	0,3-1,0 = 4,75	-	<u>-</u>	-	ca. 26	300 100	7,9 min.19,5 8,3-8,5	1050 500 885	10,4-10,5 11,1-11,2 10,7-10,9
ca.57	9,4 4,0 1295	1090-1100 1130-1160 0,3 - 1,5	<u>י</u> ן				300 410-4		003	10,7-10,5

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

(20)	ill-load stop	6 Rotational- speed limitat	Starting fuel delivery 5 4a Idle stop					
rev/min	emp, 40°C (104°F) cm3/1000 strokes 2	Note: changed to) rev/min 3	rev/min	cm ³ /1000 strokes 5	rev/min 6	cm³/1000 strokes 7	rev/min 8	travel mm 9
1050	71,0-72,0 (69,0-74,0)	1090-1100*	600	66,5-68,5 (64,0-71,0)	100	88,0-98,0 (85,0-101, = 14,7 - 15,3 mm RW		-

Checking values in brackets

* 1 mm less control rod travel than col. 2

BOSCH

Geschaftsbereich KH. Kundendienst. Kfz-Ausrüstung. © 1980 by Robert Bosch GmbH, Postfach 50, D-7000 Stuttgart 1. Printed in the Federal Republic of Germany Imprimé en République Fédérale d'Allemagne par Robert Bosch GmbH.

WPP 001/4 EIC 2,9 c 2 1. Edition

FLS 3 A 90 D 320 RS 2626

RSV 300-1050 A 1 B 2171-4 R

supersedes

company: Eicher

EDL 3-9 49 kW

Komb.-Nr. 0 400 873 035

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

Testoil-ISO 4113

2,2 - 2,3 (2,15-2,35)

mm (trom BDC) RW = 9,0 - 12,0 mm

Rotational	Control rod	Fuel delivery	Difference	Control rod	Fuel delivary	Spring pre-tensioning (torque-control valve)
speed rev/min	mm 2	cm ¹ /100 strokes	cm ³ / 100 strokes 4	mm 2	cm ³ /100 strokes	mm 6
1050	12,7+0,1	8,9 - 9,0	0,25(0,5			
300	8,3-8,5	2,2 - 3,2	0,2(0,45	1		

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

	r rated speed Control rod travel mm		Interno	ediate		speed 6	Control- lever deflection in degrees 7	Lower rev/min 8	rated speed Control rod travel mm 9	11 3 /	rque control Control rod travel mm
loose	800 x =	0,3-1,0 4,75	-		-	-	ca. 26	100	7,9 min.19,5 8,3-8,5	1050 500 775	12,7-12,8 13,4-13,5 13,0-13,2
ca. 58	11,7 4,0 1310	1090-1100 1145-1175 0,3-1,7						300 410 -	470 =2,0		13,0 13,2

The numbers denote the sequence of the tests

C. Settings for Fuel injection Pump with Fitted Governor

2b) Full-load stop Test oil temp. 40°C (104°F)		Rotational- speed limitat		el delivery aracteristics 1	Starting fi	uel delivery (5)	(4a) Idle stop	
rev/min	cm ³ /1000 strokes	changed to) rev/min 3	rev/min 4	cm³/1000 strokes 5	rev/min 6	cm³/1000 strokes 7	rev/min 8	travel mm 9
1050	88,5-89,5 (86,5-91,5)	1090-1100*	600	90,0-92,0 (87,5-94,5)	100	120,0-130 (117,0-133 = 19,5- 21,0 mmRk	,0)	-

Checking values in brackets

WPP 001/4 EIC 2,9 c 4

1 Edition

PES 3 A 90 D 320 RS 2626

RSV 300-975 A 1 B 2171-5 R

supersedesi Eicher EDL 3-2

Komb.-Nr. 0 400 873 036

40 kW

1 - 3 - 2 je 120°

Testoil-ISO 4113

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings 2,2-2,3 Port closing at prestroke (2,15-2,35) mm

mm (from BDC)

Rotational speed	Control rod	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm 2	cm ³ /100 strokes	cm ³ / 100 strokes 4	mm 2	cm ³ /100 strokes	mm 6
975	11,3+0,1	7,7-7,8	0,25(0,5)			
300	7,9-8,1	1,5-2,5	0,2 (0,45			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

	r rated speed Control rod travel mm	rev/min Control rod travel mm rev/min	Interme	diate rated	speed 6	Control- lever deflection in degrees 7	Lower rev/min 8	rated speed Control rod travel mm	1 2 3	rque control Control rod travel mm
loose,	800 X	0,3-1,0 = 5,25	•	•	•	ca. 23	300 100	7,5 min.19,5	-	-
ca. 53	10,4 4,0 1235	1015-1025 1070-1100 0,3-1,7	ji i				300	7,9-8,1 75=2,0		

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

1 Control re			Starting fo	•	6 Rotational-speed limitat. 3a Fuel delivery characteristics			Full-load stop Test oil temp. 40°C (104°F)	
travel nm 9		cm ³ /1000 strokes 7	rev/min 6	cm ³ /1000 strokes	rev/min	Note: changed to) rev/min 3	cm ³ /1000 strokes	Test oil te rev/min 1	
-	0 -	128,0-138. (125,0-141.	100	68,0-70,0 (66,5-72,5)	600	1015-1025*	77,0-78,0 (75,0-80,0)	975	
	0	128,0-138 (125,0-141	100	68,0-70,0 (66,5-72,5)	600	1015-1025*	77,0-78,0 (75,0-80,0)	975	

Checking values in brackets

40

WPP 001/4 FOR 5,9 d

3. Edition

En

PES 6 A 90 D 210 RS 2628

RSV 325-1200 AOB 2140 L

supersedes company

8.82 Ford

Komb.-Nr. 0 400 866 104

engine

Dover 363 T/C

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

2,7-2,8 (2,65-2,85)

mm (from BDC)

At port closing the locating pin must engage $% \left(1\right) =\left\{ 1\right\}$

in the slot of the pointer.

		2,00 2,007		111 0110 31	OU OI CITE POT	
Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm (2)	cm³/100 strokes	100 strokes	mm	cm³/100 strokes	mm
1	2	3	4	2	3	6
1175	11,5+0,1	8,4-8,5	0,3(0,45)			
350	5,1-5,3	0,5-1,1	0,2(0,4)			
	1					

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

	r rated speed Control rod travel mm	rev/min Control rod travel mm rev/min 3	Intermed	diate rated	speed	Control- lever deflection in degrees 7		rated speed Control rod travel mm	3 To	rque control Control rod travel mm
loose	800 x =	0,3-1,0 4,0	-	-	-	ca.38	350 100 350	4,7 min.19,0 5,1-5,3	-	-
ca.67	10,5 4,0 1540	1240-1250 1375-1405 0,3-1,7					490 <i>-</i> 625	550 =2,0 max. 1,0		

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

9	ill-load stop		Rotational- speed limitat Speed limitat Rotational- speed limitat			uel delivery 5	4a Idle stop		
rev/min	emp 40°C (104°F) cm\1000 strokes 2	Note changed to .) rev/min	rev/min	cm ³ /1000 strokes 5	rev/min	cm³/1000 strokes	rev/min 8	Control rod travel mm 9	
LDA 1175	0,7 bar 83,5-84,5 (81,5-86,5)	1240-1250*	L DA 500	0 bar 49,0-51,0 (47,0-53,0)	100	76,0-90,0 / 19,0- 21,0 mm RW	-	-	

Checking values in brackets

* 1 mm less control rod travel than col. 2

6.83

BOSCH

Geschaftsbereich KH. Kundendienst. Ktz-Ausrustung c 1980 by Robert Bosch GmbH, Postfach 50, D-7000 Stuttgart 1. Printed in the Federal Republic of Germany Imprimé en République Fédérale d'Allemagne par Robert Bosch GmbH.

Test at n =

1175

rev/min decreasing pressure - in bar gauge pressure

FOR 5,9 d -2-

Pump/governor	Setting	Measurement	diminution Control rod travel difference
	Gauge pressure = bar	Gauge pressure = bar	mn (1)
PES 6 ARS 262& with .AOB 2140 L	0,7	0 0,48 0,30	11,5-11,6 10,1-10,2 11,1-11,2 10,2-10,4

Notes

(1) when n =

rev/min and gauge pressure =

bar (= maximum full-load control rod travel)

Testoil-ISO 4113

Testoil-130 4113

WPP 001/4 FOR 5,9 £

2. Edition

En

PES 6 A 90 D 210 RS 2629 Komb.-Nr. C 400 866 102 RSV 350-1300 AOB 2142 L

supersedes 8.82

company: Ford

engine: Dover 363

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

At port closing the locating pin must

Port closing at prestroke (2,65-2,85) mm (from BDC) engage in the slot of the pointer.

Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm 2	cm ³ /100 strokes 3	cm ³ / 100 strokes 4	mm 2	cm³/100 strokes 3	mm 6
1250	11,7+0,1	5,9-6,0	0,3(0,45)			
350	7,3-7.5	0,7 - 1,3	0,2(0,4)			
					·	

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper	rated speed		Intermediate	rated spe	ed	4 Lowe	r rated spe		3 Tor	que control
Degree of deflection of control lever	rev/min	Control rod travel	Degree of deflection of control lever	rov/min	Control rod travel	Degree of deflection of control lever	rev/min	Control rod travel mm	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	10	11
loose .	800	0,3 - 1,0	-	-	-	ca.39	350	6,9	1250	11,7+0,1
	χ :	3,5						min.19,5 7,3-7,5	700	11,9+0,1
ca. 71	10,7	11370-1380 11515-1545	} 			1	580-6	40= 2,0	}	
(5)	1680	0,3-1,7								<u> </u>

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2 Full-to	ad stop	6 Rotational- speed limitat.				fuel delivery	(5a) Idle stop		
Test oil temp. 40°C (104°F) rev/min cm²/1000 strokes 1 2		Note: changed to rev/min 3	rev/min cm³/1000 strokes 4 5		rev/min cm³/1000 strokes 6 7		rev/min 8	Control rod travel mm	
1250	58,5-59,5 (5 6,5-61,5)	1370-1380 *	1.000	51,0 - 55,0 (49,0 - 57,0)	100	76,0-90,0 bei 19, - 21,0 mm RW	-	-	

Checking values in brackets

1 mm less control rod travel than col. 2

6.83

WPP 001/4 FIA 5,5 e 2. Edition

PES 6 A 80 D 410 RS 2633

ROV 300-1350 AB 1175 L

Komb.-Nr. 0 400 846 499

supersedes 6.83

company: Fiat

8060.24.661 90.5 kW

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

mm (from 8DC) RW = 9 0 - 12 0 mm

Rotational speed rev/min	Control fod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ² / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1350	13,5+0,1	6,7 - 6,8	0,25(0,35			
300	7,1-7,3	0,9 - 1,5	0,2 (0,3)			
008	-	C, Sp. 4u.5	0,35(0,45			
800	-	c, sp. 40.5	0,35(0,45			
	_					

Adjust the fuel delivery from each outlet according to the values in ____

B. Governor Settings

Upper rated s	peed		Intermediate	rated sp	ed		Lower rated	speed	1	Sliding s	leeve travel
deflection of control	rev/min Control rod travel mm	Control rod travel mm rev/min 2s	Degree of deflection of control lever	rev/min	Control i travel mm 6	rod	Degree of deflection of control lever	rev/min	Control rod travel mm 3	rev/min	(1)
max.	1440	15,2-17,8	-	-		-	ca. 13		min.9,0 7,4-7,6		0,2-0,5 3,0-3,5
ca. 60	12,5 4,0 1700	1390-1400 1540-1570 0 - 1.0					350-450	920	max.1,0		5,2-5,4 9,6
Ì							3				

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

1	stop ip. 40°C (104°F) 2	Rotational-speed (20) limitation intermediate speed rev/min	(3)		Starting fuel delivery tidle switching point rev/min cm³/1000 strokes		Torque- travel rev/min	Control cod travel mm
LDA 1350	0,7 bar 66,5-67,5 (65,0-69,0)	1390-1400*	LDA 800 LDA 500	0,7 bar 59,0-61,0 (57,0-63,0) 0 bar 39,5-41,5 (37,5-43,5)	200	70,0-80,0 (67,0-83,0) = 15,0-15,5 mm RW	-	-

Checking values in brackets

* 1 mm less control rod travel than col. 2

283

- 2 -

D. Adjustment Test for Manifold Pressure Compensator

FIA 5,5 e

Test at n =

1350

rev/min decreasing pressure - in bar gauge pressure

Pump/governor	Setting	Measurement	diminution Control rod travel-
		Gauge pressure ≃ bar	difference mm (1)
PES 6 ARS 2633 +RQVAB 1175 L	0,70	0,27 0,23 0	13,5 - 13,6 13,2 - 13,3 12,4 - 12,6 12,0 - 12,1

Notes

(1) when n =

rev/min and gauge pressure =

bar (= maximum full-load control rod travel)

Testoil-ISO 4113

Test Specifications Fuel Injection Pumps and Governors

WPP 001/4 5TC 3,9 c 3. Edition

En

PES 4 A 90 D 320 RS 2634

RSV 300-1025 A 1 B 2153 R

supersede6.83 company Eicher

1 - 2 - 4 - 3 je $90^{\circ} + 0.5^{\circ} (\pm 0.75^{\circ})$

engine: EDL 4-2

Komb.-Nr. 0 400 874 233

65 kW (88 PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

mm (from BDQ) RW=9.0 - 12.0 mm

ort closing at pres		(2,15-2,35)		/10	1210 1415	
Rotational speed	Control rod	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm	cm ³ /100 strokes	cm³/ 100 strokes	mm	cm ³ /100 strokes	mm
1	2	3	4	2	3	6
1025	12,6+0,1	8,1 - 8,2	0,2(0,45)			
300	10,9+0,2	4,4 - 4,9	0,2(0,4)			
					,	
ı						i
ļ					<u> </u>	

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper	rated speed		Intermediate rated speed			4 Lower	r rated spe	ed	3 Torque control	
Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel	Degree of deflection of control lever	rev/min	Control rod travel mm	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	10	11
loose	800	0,3 - 1,0	-		-	ca. 16	300	10,5	i	12,6+0,
	x =	2,25					300	0,9-11,1	500 880	13,2+0, 12,9+0,
€ , 46	11,6 4,0 1260	1065-1075 1095-1125 0,3-1,0					400-4	60 =2,0		

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2 Full-lo	ad stop	6 Rotational- speed limitat.		Fuel delivery Scharacteristics		fuel delivery	Sa) Idle stop	
Test oil temp. 40°C (104°F) rev/min cm³/1000 strokes 1 2		Note: changed to rev/min 3	rev/min cm³/1000 strokes 4 5		rev/min cm³/1000 strokes 6 7		rev/min 8	Control rod travel mm 9
1025	81,0-82,0 (79,0-84,0)	1065-1075*	750 500	83,5-86,5 (81,5-88,5) 77,0-79,0 (75,0-81,0)		101,0-111,0 (98,0-114,0 = 17,7-18,3 mm RW)	-

Checking values in brackets

WPP 001/4 EIC 3,9 £ 2. Edition

En

PES 4 A 80 D 320 RS 2651

RSV 300-1075 A1B 2175 R

Komb.-Nr. 0 400 874 235

1 - 2 - 4 - 3 je $90^{\circ} - 0,5^{\circ} (-0,75^{\circ})$

supersede 1.82 company Eicher engine: EDL 4-1

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

(2.1 - 2.3)

mm (from BDC)

Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm 2	cm³/100 strokes 3	cm³/ 100 strokes 4	mm 2	cm ³ /100 strake s 3	mm 6
1075	10,5+0	1 6,2-6,3	0,2 (0,3	5)		
300	9,4-9,6	3,0-4,0	0,2 (0,3)		
					•	

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper	rated speed		Intermediate	rated spe	ed	4 Lower	rated spe	ed	3 Tor	que control
Degree of deflection of control lever	rev/min	Control rod travel	Degree of deflection of control lever	rev/min	Control rad travel	Degree of deflection of control lever	rev/min	Control rod travel	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	10	11
loose	800	0,3-1,6	-	-	-	ca. 29	300	9,0	1075	10,5+0,
	Χ :	5,5						min 19,5 9,4-9,6	500 850	11,3+0 10,9+0
ca. 6'	9,5 4,0 1330	1115-1125 1165-1195 0,3-1,7	· 					10 =2,0		

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2 Full-to	ad stop	6 Rotational- speed limitat.		el delivery aracteristics	Starting Idle	fuel delivery	5a Idle stop		
Test oil tem rev/min 1	p. 40°C (104°F) cm³/1000 strokes 2	Note: changed to rev/min 3	rev/min	cm ³ /1000 strokes 5	rev/min	cm³/1000 strokes 7	rev/min	Control rod travel mm 9	
1075	62,0-63,0 (60,5-64,5)	1115-1125*	600	64,5-66,5 (63,0-68,0)	100	17,4-18,0 mm RW	-	-	

Checking values in brackets

* 1 mm less control rod travel than col. 2

9.83

40

WPP 001/4 EIC 3,9 g 2.Edition

En

PES 6 A 80 D 320 RS 2652

RSV 300-1050 A 0 B 2001-1 R

supersedes 3.83

company Eicher

Komb.-Nr. 0 400 876 314

engine EDL6-1

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

Testoil-ISO 4113

2,15-2,25 (2,10-2,30)

mm (from BDC)

Rotational speed rev/min	Control rod travel	Fuel delivery cm³/100 strokes 3	Oifference cm ³ / 100 strokes	Control rod travel mm	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1050	10,4+0,1	6,5-6,6	0,2(0,35)		·	
300 600	6,9-7,1	1,1-1.7 C, Sp. 4 u. 5	0,2(0,3) 0,3			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Uppe Degree of deflection of control	r rated speed Control rod travel		Interme	diate rate	speed	Control- lever deflection		rated speed Control rod travel mm	(3)	que control Control rod travel mm
lever 1	2	3	4	5	6	in degrees 7	8	9	10	11
loose ,	800 X =	0,3-1,0 6,0	-	-	-	ca. 29	300 100 300	6,5 min.19,0 6,9-7,1	500	10,4-10,5 11,4-11,5 10,9-11,1
ca. 51	9,4 4,0 1325	1090-1100 1160-1190 0,3-1,7					445-505 650			

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

ピツ	ill-load stop emp. 40°C (104°F)	6 Rotational- speed limitat		iel delivery paractenstics 1	Starting for	uel delivery 5	(4a) Idle stop		
rev/min	cm ³ /1000 strokes	changed to) rev/min 3	rev/min	cm ³ /1000 strokes 5	rev/min 6	cm³/1000 strokes 7	rev/min 8	travel mm 9	
1050	64,5-65,5 (63,0-67,0)	1090-1100	600	68,5-70,5 (67,0-72,0)	100	100,0-110, = 16,2-16, mm RW		-	

Checking values in brackets.

1 mm less control rod travel than col. 2

9.83

BOSCH

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WPP 001/4 EIC 3,9 g 1

1. Edition

PES 6 A 80 D 320 RS 2652

RSV 300-1150 A 0 B 2001-2 R

supersedes company Eicher

Komb.-Nr. 0 400 876 317

engine EDL 6-2

All test shacifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestreke

Testoil-ISO 4113

2,15-2,25 (2,1-2,3)

mm (from BDC)

Rotational	Control rod	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
speed rev/min 1	mm 2	cm ³ /100 strokes 3	cm ³ / 100 strokes 4	mm 2	cm ³ /100 strokes 3	mm 6
1150	12,0+0,1	7,8 - 7,9	0,25(0,4)			4
300	8,3-8,5	2,0 - 3,0	0,2(0,35)			
		1				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

(1) Uppe	er rated speed		Interme	Intermediate rated speed				rated speed Control rod	Torque control [Control rod		
Degree of deflection of control lever:	Control rod travel mm	Control rod travel mm rev/min	4	5	6	Control- lever deflection in degrees 7	rev/min	travel mm 9	rev/min	travel mm 11	
loose	800 x =	0,3-1,0 2,75	-	_		ca. 17	100	7,9 min. 19,5	ŀ	-	
ca. 42	11,0 4,0 1430	1190-120 1285-131 0,3-1,7	5				300 570 - 6	8,3 - 8,5 30 = 2,0			

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

ピツ	ill-load stop		speed limitat. Characteristics			uel delivery 5	Idle stop	
Test oil to rev/min 1	emp. 40°C (104°F) cm³/1000 strokes 2	Note: charged to .) rev/min 3	rev/min	cm ³ /1000 strokes 5	rev/min	cm³/1000 strokes 7	rev/min B	travel mm 9
1150	77,5-78,5 (76,0-80,0)	1190-1200*	600	71,0-73,0 (69,0-75,0)	100	103;0-113, = 16,2- 16,8 mmRW) -	-

Checking values in brackets

* 1 mm less control rod travel than col. 2

6.83

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40

WPP 001/4 MWM 6,2 e 1

1. Edition

En

PES 6 A 90 D 320/3 RS 2660

RSV 325-1200 A 0 B 2181 R

supersedes-

company MWM

Komb.-Nr. 0 400 866 114

TD 226 B-6

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

Testoil-ISO 4113

2,95-3,05 (2,8-3,1)

mm (from BDC)

Rotational	Control rod	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
speed revimin 1	mm 2	cm ³ /100 strokes	cm ² / 100 strokes 4	mm 2	cm³/100 strokes 3	mm 6
12'00	9,0-9,1	7,5 - 7,6	0,3(0,45)			
325	7,4-7,6	2,6 - 3,4	0,25(0,4)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Doores of	r rated speed Control rod travel mm		Intermed	liate rated	speed	Control- lever deflection in degrees 7		rated speed Control rod travel mm	1(3)	que control Control rod travel mm
loose	800 x =	0,3-1,0	-	•	•	ca. 25	325	7,0	1200 500 860	9,0 - 9,1 9,9 -10,0 9,5 - 9,7
ca. 51	8,0 4,0 1465	1240-1250 1300-1330 0,3-1,7					545-0	5 = 2,0		

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

(2b) Fu	ill-load stop	Rotational- speed limitat	Rotational- speed limitat (3a) Fuel delivery characteristics			uel delivery 5	4a) Idle stop		
ļ	emp 40°C (104°F)	Note: changed to) rev/min 3	rev/min	cm ³ /1000 strokes 5	rev/min 6	cm³/1000 strokes 7	rev/min 8	travel mm	
LDA 1200	0,7 bar 74,5-75,5 (72,5-77,5)	1240-1250*	LDA 500	0 bar 59,5-60,5 (57,5-62,5)	100	113,0-123 = 19,5 - 21,0 mmRW		-	

Checking values in brackets

* 1 mm less control rod travel than col 2

6.83

BOSCH

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MWM 6,2 e 1 - 2 -

Testatn =

500

rev/min increasing pressure - in bar gauge pressure

500			T
Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure = bar	Gauge pressure ≃ bar	mm (1) .
PES 6 ARS 2660 + RSVAOB 2181 R	0,70	0 0,14 0,13	9,9 -10,0 9,0 - 9,1 9,8 - 9,9 9,5 - 9,7
	1		1

Notes

(1) when n =

rev/min and gauge pressure =

bar (= maximum full-load control rod travel)

WPP 001/4 PEN 6,0 f 2. Edition

PES 6 MW 100/320 RS 1004 0 403 476 012

RSV 325-1050 MW 4/308

supersed#4.82 company Volvo/Penta TD 60 D

112 kW (152 PS)

1 - 5 - 3 - 6 - 2 - 4

0 - 60 - 120 - 180 - 240 - 300 + 0,50 (0,75)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

Testoil-ISO 4113

(2,75-2,95)

mm (from BDC)RW 9,0 - 12,0 mm

Rotational	Control rod	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
3,000	mm 2	cm1/100 strokes	cm³/ 100 strokes 4	mm 2	cm ³ /100 strokes 3	mm 6
1020	10,6+0,1	8,45-8,65	0,35(0,6)			
325	4,9-5,0	1,0 -1,4	0,35(0,55)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Degree of deflection of control lever	r rated speed Control rod travel mm	rev/min Control rod travel mm rev/min	Interm	nediate rati	ed speed	Control- lever deflection in degrees 7	Lower rev/min 8	rated speed Control rod travel mm 9	(()	rque control Control rod travel mm + 0,1
loose	800 x =	0,3-1,0				ca. 26	325 325	4,3	350 500	11,2 10,8
ca.63	1130-1	100 = 9,6 160 = 4,0 0,3-1,7					450-51	0 = 2,0	1050	10,6

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2b Fuli-load stop Test oil temp. 40°C (104°F)		Rotational-speed limital Ga Fuel delivery characteristics						Control rod
rev/min	cm ³ /1000 strokes	changed to) rev/min 3	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes 7	rev/min 8	travel mm 9
1020	84,5-86,5 (82,5-88,5)	1090-1100*			100 325	min.140,0 10,0-14,0 (7,5-16,9	l	4,9

Checking values in brackets

* 1 mm less control rod travel than col 2

9.83

Test Specifications Fuel Injection Pumps (A) and Governors

WPP 001/4 DEE 7,6 b

2. Edition

PES 6 A 100 D 410 RS 3034

RSV 600-1100 A 2 B 2080 L

4.83

Komb.-Nr. 0 401 276 049

John Deere 6.466 AZ-01 152 kW

Use oberflow valve 1 413 385 007

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

1,95-2,05 (1.90-2.10)

mm (from BDC)

	1,2	,30-2,10)				
Rotational speed	Control rod	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm (2)	cm ² /100 strokes	cm ³ / 100 strokes	mm	cm ³ /100 strokes	mm
1	2	3	4	2	3	6
1100	11,9+0,1	13,0-13,2	0,3			
600	4,8-5,0	1,3-1,7	0,3			-
			,			
; 						

Adjust the fuel delivery from each outlet according to the values in [

B. Governor Settings

1 Uppe	r rated speed		Interme	diate rated	speed				Torque control		
Degree of deflection of control lever 1	Control rod travel mm	Control rod travel mm rev/min 3	4	5	6	Control- lever deflection in degrees 7	rev/min 8	Control rod travel mm	rev/min	travef mm	
loose,	800	0,3-1,0		_	-	ca. 19	600	4,4	-	-	
		_				-	100 600	min. 19,0 4,8-5,0			
ca. 37	11,2 4,0 1250	1145-1155 1195-1225 0,3-1,7					620-680 800	= 2,0 max. 1,0			

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

	ill-load stop imp. 40°C (104°F)	Rotational- speed limitat	39 Fu	et delivery aractenstics	Starting f	uel delivery 5	4a) Idle	e stop Control rod
rev/min	cm³/1000 strokes 2	changed to) rev/min 3	rev/min 4	cm³/1000 strokes 5	rev/min 6	cm¥1000 strokes 7	rev/min 8	mm 9
LDA 1100	0,7 bar 130,0-132,0 (128,5-133,5)	1145-1155*	LDA 500	0 bar 68,5-71,5 (67,0-73,0)	100	= 19,0-	,0 60 W	0 4,9

Checking values in brackets

* 1 mm less control rod travel than col. 2

DEE 7,6 b

Test at n =

500 rev/min decreasing pressure – in bar gauge pressure

Pump/governor	Setting Gauge pressure = bar	Measurement Gauge pressure = bar	diminution Control rod travel- difference mm (1)
PES 6 ARS 3034 +RSVA 2 B 2080L		0,13	2,65-2,75 0,7-1,1
•			

Notes:

(1) when n =

rev/min and gauge pressure =

bar (= maximum full-load control rod travel)

D2.

Test Specifications Fuel Injection Pumps (A) and Governors

WPP 001/4 VOL 6,0r2

En

PES 6 MW 100/320 RS 1104 RSV 650-750 MW 4/311-2 0 403 476 018

supersedes Volvo TD 60 DG 86 kW

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings 2,80-2,90 Port closing at prestroke (2,75-2,95) mm

Testoil-ISO 4113

mm (from BDC) RW 9 - 12 mm

otational peed	Control rod	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve
ev/min	mm (2)	cm ³ /100 strokes	cm ³ / 100 strokes	mm	cm³/100 strokes	mm
	2	3	4	2	3	6
700	11,1+0,1	9,05-9,25	0,35(0,6)			
650	4,5-4,6	1,7 - 2,1	0,35(0,55)			
	1					
					-	

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

14 1 /	deflection travel		Intermo	ediate rate	ed speed	Control- lever		rated speed Control rod travel	3 To	rque control Control rod travel mm
of control lever	mm 2	mm rev/min	4	5	6	deflection in degrees 7	rev/min 8	mm 9	10	11
loose	800 x =	0,3-1,0 3,0				ca. 34	650 650	4,0	375 470	11,9-12,5
ca.40	4,0 =	750-760 760-790 7 = 930					690-75	0 = 2,0		

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

(4)	H-load stop	6 Rotational- speed limitat	(3a) Fuel delivery characteristics		Starting f	uel delivery 5	4a Idle stop	
Test oil te rev/min 1	cm ³ /1000 strokes 2	Note. changed to) rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min	cm ³ /1000 strokes 7	rev/min 8	travel mm
700	90,5-92,5 (88,5-94,5)				650	17-21 (15,5-22,	5)	
				<u> </u>				

Checking values in brackets

* 1 mm less control rod travel than col. 2

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Fuel Injection Pumps 2 and Governors

WPP 001/4 MB 8,7 j

6. Edition

En

PE 6 MW 100/720 RS 1007

RQ 300/1250 MW 12-1 (MW 12)

Komb.-Nr. 0 403 546 001

supersedes 11.82

company: Daimler Benz

engine OM 360 A

155 kW (211 PS)

1 - 5 - 3 - 6 - 2 - 4 = 0 - 60 - 120 - 180 - 240 - 300 + 0,50 (0,75)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

Testoil-ISO 411

3,80-3,90 (3,75-3,95)

mm (from BDC) RW 9,0 - 12,0 mm

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm
1250 300 750	11,2+0,1 6,9-7,1 11,2+0,2	1,35-1,75	0,35(0,6 0,35(0,5 0,5 (0,7	5)		

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Checking PRG che	g of slider ck	Full-load s	•	•	cifications (4)	idle spee Setting p	•		cifications (5)	Torque control		
• -	Control rod travel mm 2		Control rod travel rnm 4	Control red travel mm	rev/min	rev/min 7	Control red travel rnm 8	rov/min	Control rod travel mm 10	rev/min	Control rod (travel	
650	13,1-13,9	650	13,5	10,2	1295-1310	300	7,0	220	min.9,0			
1550	0,1-1,0	VH =	46 ⁰	4,0	1395-1425			300 395- 435	6,9-7,1 = 2,0			

Torque-control travel on flyweight assembly dimension a =

Speed regulation: At

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

	elivery on control lever np. 40°C (104°F)	Control rod stop 3a	Fuel deliv	ery characteristics	36)	Starting f	uel delivery d Contre
rev/min 1	cm ³ /-1000 strokes	rev/min 3	rev/min	cm ³ /-1000 strokes		rev/min	red travel cm ³ /1000 strokes:// mm 7
1250	99,5-101,5 (97,5-103,5)	500	750	93,0-97,0 (91,0-99,0)		100 300	125,0-135,0 (122,0-138,0) 13,5-17,5 (11,0-20,0)
		·					

Checking values in brackets

8.83

Geschäftsbereich KH. Kundendlenst. Kfz-Ausrüstung.

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①

Testoil-ISO 4113

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 KHD 12,7 d

7. Edition

PE 8 MW 100/720 LS 1010 RQV 300-1150 MW 23 Komb. 0 403 548 002

1 - 8 - 7 - 2 - 6 - 5 - 4 - 3 $0 - 45 - 90 - 135 - 180 - 225 - 270 - 315 \pm 0,5 (0,75)^{\circ}$

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

eupersede41.82
company: KHD
engine: BF 8 L 413 F
212 kW (288 PS)
/ 2100 min
bzw. 206 kW
/ 2300 min
(Maxidyne)

A. Fuel Injection Pump Settings

Rotational speed	Control rod travel mm	Fuel delivery cm ³ /100 strokes	Difference cm ³ / 100 strokes	Control rod travel mm 2	Fuel delivery cm³/100 strokes 3	Spring pre-tensioning (torque-control valve) mm
700	12,5+0,	13,6-13,8	0,35(0,6)			
300	6,3-6,	1,25-1,65	0,35(0,55)		
500	10,2+0,	<u> </u>				
		<u> </u>			<u></u>	

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated s	peed			Intermediate	rated sp	eed	Lower rated	speed			Sliding s	ieeve travel
deflection of control	rev/min Control rod travel mm 2	mm ·		Degree of deflection of control lever	rev/min 5	Control rod travel mm 4	Degree of deflection of control lever	rey/min 8	Control rottravel mm 9	d 3	rev/min	mm 11
max.	1180 1400	15,2-17, 0 - 1,	_				ca.18,5	100 300	min.7, 6,3-6,	,5	300 500	1,4 3,2 - 3,8
ca. 63	9,2 4,0	1160-117 1235-126						430-	490 =2,	,0	1200	8,5-8,6
							3					

Torque control travel a =

നന

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load d Control-ro Test oil ter	d stop mp. 40°C (104°F) 2	Rotational-speed (2b) limitation intermediate speed rev/min	Fuel deliv high idle s rev/min	very characteristics (5a)	idie switchir	• . •	Torque- travei	Control (5) Control rod travel
 1	2	3	4	5	6	7	8	9
LDA 700	0,8 bar 136,0-138,0 (134,0-140,0		LDA 500	0 bar 94,0-96,0 (92,0-98,0)	100	136,5-146,5 (133,5-149,5) ⁷⁸⁰ 1050	12,5+0,1 12,5+0,1 11,2+0,2
				·	100-	230 (80-250)	1150	10,2+0,3

Checking values in brackets

* 1 mm less control rod travel than col. 2

Testatn =

Pump/governor

MW 23

LS 1010 +

500

Setting

Gauge pressure =

0,8

ney/min decreasing pressure - in bar gauge pressure

Measurement

bar | Gauge pressure =

0,24

0,38

0

Control rod travel-difference mm (1) ...

12,5 - 12,6
10,5 - 10,6
11,8 - 11,9
10,2 - 10,3

-2-

Notes

(1) when n =

rev/min and gauge pressure =

bar (= maximum full-load control rod travel)

bar mm

D6

Test Specifications Fuel Injection Pumps 1 and Governors

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

WPP 001/4 0MB 8.1 c 1

2. Edition

PES 6 MW 100/720 RS 1012

ROV 425-1100 MW 35

superseden 82

0 403 446 126

1 - 5 - 3 - 6 - 2 - 4

 $0 - 60 - 120 - 180 - 240 - 300 \stackrel{+}{-}0,50 (0,75)$

companyOM-Brescia engine: 8365.25.522 112 kW (152 PS)

A. Fuel Injection Pump Settings

2,90-3,00 Port closing at prestroke

mm (from 8DC) RW 9,0 - 12,0 mm

	Control rod travel	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1100	10,2+0,	1 8,15-8,35	0,35(0,6)			
425	5,8-6,0	1,05-1,45	0,35(0,55	b		
700	11,1+0,1		0,5 (0,7)			
50 0	10,6+0,1		0,35(0,6)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated t	peed	,	Intermediate	rated sp	eed	Lower rated	speed	1	Sliding s	leeve travel
Degree of deflection	rev/min Control	Control rod travel	/ deflection		Control rod travel	Degree of deflection	1	Control rod travet		0
of control lever	rod trave mm	mm rev/min (2t	of control lever	rev/min	mm (4)	of control lever	rev/min	mm ③	rev/min	mm
1	2	3	4	5	6	7	8	9	10	11
max.	1100	15,2-17,8	-		-	ca.14	425		425	1,8
	1300	0 - 1,0					100	min. 7,5	500 1150	2,3 - 3,0 9,0 - 9,2
ca.48	9,2	1140-1150					470-	530=2,0		
	4,0	1185-1219	i ·			39				

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F) 2		Rotational-speed 2b timitation intermediate speed				fuel delivery 6	Torque-	control 5 Control rod
rev/min		rev/min 49	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes 7	rev/min 8	travel mm g +0,1
LDA 1100	0,5 bar 81,5-83,5 (79,5-85,5)	1140-1150*	10A 700 1DA 500	0,5 bar 84,5-88,5 (82,5-90,5) 0 bar 67,5-69,5 (65,5-71,5)	100 425	RW max.19 min.160 (min.157) 10,5-14,5 (9,0-18,0) 345 (80-365)	700 1000	11,1

Checking values in brackets

* 1 mm less control rod travel than col. 2

Test at n = fev/min decreasing pressure - in bar gauge pressure

OMB 8,1 c 1

-2-

500			4
Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1) .
RS 1012 +	0,25		10.9 - 11,0
RQVMW 35		0,5	11,1 - 11,2
		0	10,6 - 10,7
·			

Notes:

(1) when n =

rev/min and gauge pressure =

bar (= maximum full-load control rod travel)

Testoil-ISO 4113

Test Specifications Fuel Injection Pumps 1 and Governors

WPP 001/4 OMB 8,1d

3. Edition

PES 6 MW 100/720 RS 1012

ROV 425-1100 MW 36

superse@s 83 compan@M-Brescia 8365.25.580 129 kW (175 PS)

0 403 446 127

1 - 5 - 3 - 6 - 2 - 4

 $\pm 0,5 (0,75)$ 0 -60-120-180-240-300 All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at pres		2,90-3,00 (2.85-3.05)	mm (from BDC)	9,0-12,0	mm	
Rotational speed		Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm 2	cm ³ /100 strokes 3	cm ³ / 100 strokes 4	mm 2	cm³/100 strokes 3	mm 6
1100	11,5+0,1	9,6 - 9,8	0,35(0,6			_
425	5,8-6,0	1,15 - 1,55	0,35(0,55			
700	12,4+0,1		0,5 (0,7			
500	11,2+0,1		p,35(0,5)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated	speed			Intermediate	rated spe	bes		Lower rated	speed	1		Stiding sl	leeve travel
Degree of deflection of control lever	rev/min Control rod trave	Centrol rod travel mm rev/min	۳	Degree of deflection of control lever	rev/min 5	Control r travel mm 6	od (4)	Degree of deflection of control lever 7	rev/min 8	Control ro travel mm 9	3	rev/min	mm 11
	 -	<u></u>											
max.	1100	15,2-17,	8	-	-	-		ca.14	425	5,8-6	,0	125	1,8
	1300	0 - 1,0)						100	min.7	,5	1150	2,3-3,0 9,0-9,2
ca.49	10,5	1140-115	50						470-5	30= 2	2,0		
	l i	1185-121						39					

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load d Control-ro- Test oil ter		Rotational-speed (2b) limitation intermediate speed	Fuel deliv	eary characteristics 5a peed 5b	Starting Idle switchir	•	Torque- travel	control 5 Control rod travel
rev/min	cm³/1000 strokes	rev/min 49	rev/min	cm ³ /1000 strokes 5	rev/min	cm ³ /1000 strokes 7	rev/min 8	
LDA	0,5 bar		LDA	0,5 bar			700	12,4+0,
1100	96,0-98,0 (94,0-100,0)	1140-1150*	700	101,0-105,0 (99,0-107,0)		RW max.19 min.160,0	1000	11,5+0,
			LDA	0 bar	425	11,5-15,5 (9,0-18,0)		·
			500	75,0-77,0 (73.0-79.0)	100-3	(9,0-18,0) 345(80-365)		

Checking values in brackets

* 1 mm less control rod travel than col. 2

Test at n =

500 rev/min decreasing pressure - in bar gauge pressure

OMB 8,1 d

-2-

Testoil-ISO 4113

Setting	Measurement	diminution Control rod travel-
		I dinerence
Gauge pressure = bar	Gauge pressure = bar	mm (1) .
0,27		12,1 - 12,2
	0,2	11,5 - 11,7
	0,5	12,4 - 12,5
	0	11,2 - 11,3
	0,27	0,2 0,5

Notes

(1) when n =

rev/min and gauge pressure =

bar (= maximum full-load control rod travel)

①

Testoil-ISO 4113

Test Specifications Fuel Injection Pumps 1)PP 001/4 0MB 8,1 c and Governors 2. Edition

PES 6 MW 100/720 RS 1012

ROV 425-1000 MW 36-1

supersedes 4.82

0 403 446 133

company: OM Brescia 8365.25.530

121,4 kW (165 PS)

1 - 5 - 3 - 6 - 2 - 4 0 - 60 - 120 - 180 - 240 - 300

± 0.5 (0.75)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

RW 9 - 12 mm

troke	2.85-3.05)	mm (from BUC)		,	
Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
_{mm}	cm ³ /100 strokes	100 strokes	man	cm ³ /100 strokes	mm
2	3	4	2	3	6
11,7+0,1	9,1-9,3	0,35(0,6)			
6,4-6,5	1,55-1,75	0,35(0,55	\		
12,6+0,1		0,5(0,7)			
11,5+0,1		0,35(0,6)	j		
	Control rod travel mm 2 11,7+0,1 6,4-6,5 12,6+0,1	Control rod travel mm cm³/100 strokes 2 3 11,7+0,1 9,1-9,3	Control rod travel mm 2	Control rod travel mrn 2 11,7+0,1 9,1-9,3 0,35(0,6) 6,4-6,5 12,6+0,1 Control rod travel Control rod travel m:n 2 0,35(0,6) 0,35(0,55) 0,5(0,7)	Control rod travel mm cm ³ /100 strokes 3 11,7+0,1 9,1-9,3 0,35(0,6) 6,4-6,5 12,6+0,1 Difference cm ³ /100 strokes mm cm ³ /100 strokes 3 0,35(0,6)

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated s	peed		Intermediate	rated sp	eed	Lower rated	speed	4	Stiding s	leeve travel
deflection of control	rev/min Control rod travel	Control rod travel	of control		Control rod travel	Degree of deflection of control		Control rod travel	rev/min	①
lever 1	mm 2	rev/min (2s 3	lever 4	rev/min 5	mm (4) 6	lever 7	rev/min 8	mm (3)	10	11
max.	1100	15,2-17,8	-	_	-	ca. 26	425	6,4-6,5	125	1,8
	1200	0 - 1,0					100	6,4-6,5 min. 8,0	500 1050 -	2,3-3,0 8.6-8.7
			-	ļ			490-	550 = 2,0		
ca. 51	10,7	1040-1050					1			•
	4,0	1120-1150		<u> </u>		(3e)			<u></u>	<u></u>

Torque control travel a =

mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F) 2		Rotational-speed 20 limitation intermediate speed	Linguistic spaces (SD)		Starting idle switchir	. •	Torque- travel	control 5 Control rod	
rev/min	cm³/1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm³/1000 strokes	rev/min	ww	
1	2	3	4	5	6	7	8	9 +0,1	
LDA 1000	0,6 bar 91,0-93,0 (89,0-95,0)	1040-1050 *	LDA 700	0,6 bar 102,0-104,0 (99,0-106,0		RW 19-21 160,0-180,0 (157,0-183,0		12,6 12,6 12,4	
			LDA 500	0 bar 71,5-73,5 (69,5-75,5)	425 100-3	13,5-17,5 (11,0-20,0) 45 (80-365)	950 1000	11,7 11,7	

Checking values in brackets

* 1 mm less control rod travel than col. 2

Test at n =

500

rev/min Acceptance pressure - in bar gauge pressure

OMB 8,1 c -2-

300	xxxxxxx^^^^		·
Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1) .
RS 1012 +			
	0,36		12,2-12,3
RQV-MW 36-1		0,6	12,6-12,7
		0	11,5-11,6
		0,31	11,8-11,9
			· ·
·			
j			

Notes.

(1) when n =

rev/min and gauge pressure =

bar (= maximum full-load control rod travel)

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 PER 8,8c

2. Edition

PES 8 MW 100/320 RS 1022

RQV 250 - 1300 MW 37

supersedes.

0 403 448 110

company: Perkins

1 - 8 - 7 - 5 - 4 - 3 - 6 - 2

engine. TV 8.540

0 -45 -90 -135-180-225-270-315

242 kW (329 PS)

Port-closing mark on rear side

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

3,00-3,10 Part closing at prestroke (2,95-3,15)

mm (from BDC)RW 9,0-12,0 mm

Rotational speed	Control rod travel mm 2	(2,95-3,15) Fuel delivery cm³/100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1300	11,6+0,1	11,3-11,5	0,35(0,6)	•		
250	5,9-6,0	1,55-1,95	0,35(0,55			
800	11,6+0,1	ĺ	0,5 (0,7)			
			·			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated	speed		Intermediate	rated sp	ed	Lower rated	\$peed			Sliding sl	eeve travel
Degree of deflection of control tever	rev/min Control rod travel mm	travel	Degree of deflection of control lever	rev/min 5	Control rod travel mm 4	Degree of deflection of control lever	rev/min 8	Control rod travel mm (9	3	rev/min 10	mm 11
max.	1300 1500	15,2-17,8 0-1,0	-	-	-	ca.11	250 100	5,9-6,0 min.7,			
ca.64	10,6	1340-1350 1395-1425			·	270-490					
						3a					

Torque control travel a =

mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load d Control-ro Test oil ter		Rotational-speed (2b) limitation intermediate speed	Fuel deliv high idle s	ery characteristics (56)	Starting Idle switching	•	Torque-	Control (5) Control rod travel
rev/min	•	rev/min 49	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min 8	mm 9
1300	113,0-115,0 111,0-117,0)	1340-1350*	800	111,5-115,5 (109,5-117,5)	250	min. 140,0 15,5-19,5 (13,0-22,0) 180 (80-200)		

Checking values in brackets

* 1 mm less control rod travel than col. 2

Port closing and TDC markerings

Comb. - No. ... 110

°camshaft between port closing and TDC

at control-rod travel 10,5 mm 17°

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 MDB 8,7 o

1. Edition

PES 6 MW 100/720 RS 1101 ROV 300-1300 MW 44-1

0 403 446 143

supersedes

company:Daimler Benz engine: OM 362 LA

141 kW

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

3,2 - 3,3mm (from BDC) - 12 mm RW Port closing at prestroke (3.15-3.35) Spring pre-tensioning (torque-control valve) Control rod travel Fuel delivery Difference Control rod travel **Fuel delivery** Rotational speed cm3/ cm3/100 strokes 100 strokes cm³/100 strokes mm rev/min 0,35(0,6)11,9+0. 9,45-9,65 1300 0,35(0,55) 6,0-6, 1,05-1,45 300 0,5 (0,7) 11,9+0, 800 0,35(0,6) 10,2+0, 500

Adjust the fuel delivery from each outlet according to the values in [

B. Governor Settings

Upper rated	speed			Intermediate	rated sp	ed	Lower rated	sp ee d i	1	Sliding sl	eeve travel
Degree of deflection of control lever	rev/min Control rod travel mm	Control rod travel mm rev/min	(9) (20)	Degree of deflection of control lever	rov/min 5	Control rod travel mm 4	Degree of deflection of control lever	rev/min 8	Control rod travel mm 3	rev/min 10	mm 11
max.	1330 1600	15,2-17 0,1-1					ca. 11	100 300 520-	min.7,6 6,0-6,1 580= 2,0		
ca.64	10,9	1340-13 1435-1									
							3				<u> </u>

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load of Control-ro Test oil te		Rotational-speed 20 limitation intermediate speed	Fuel delivingh idle s	rery characteristics (5a)	Starting idle switching		travel	Control (5) Control rot
rev/mjn	cm³/1000 strokes	rev/min 4a	rev/min	cm ³ /1009 strokes	rev/min	cm ³ /1000 strokes 7	rev/min 8	mm 9
LDA 1300	0,7 bar 94,5-9,65 (92,5-98,5)	1340-1350*	LDA 800 LDA 500	0,7 bar 89,5-93,5 (87,5-95,5) 0 bar 54,5-56,5 (52,5-58,5)	100 300 100-2	80,0-90,0 (77,0-93,0) 10,5-14,5 (8,0-17,0) 30(80-250)		

Geschäftsbereich KH. Kundendienst. Kfz-Ausrüstung. C by Robert Bosch GmbH, 0-7 Stuttgart 1, Postfach 50. Printed in the Federal Republic of Germany. Imprime en Republique Federale d'Allemagne par Robert Bosch GmbH.

Checking values in brackets

* 1 mm less control rod travel than col. 2

Test at n =

500

rev/min increasing pressure - in bar gauge pressure

MB 8,7 o

Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure ≠ bar	Gauge pressure = bar	mm (1)
RS 1101 + MW 44-1	0,7 bar	0 0,1 0,15	11,9 - 12,0 10,2 - 10,3 10,4 - 10,5 10,9 - 11,1

Notes:

(1) when n =

rev/min and gauge pressure =

bar (= maximum full-load control rod travel)

Test Specifications Fuel Injection Pumps 1 WPP 001/4 VOL 4,5 b and Governors

2. Edition

PES 4 MW 100/320 RS 1102

ROV 300-1100 MW 39

supersedes 82 compan¥01v0-BM engine: TD 45 85 kW (116 PS)

0 403 444 101

①

Testoil-ISO 4113

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

2,80-2,90 mm (from BDC) Port closing at prestroke

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm³/ 100 strokes	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
700	11,6+0,1	10,0-10,2	0,35(0,6)			
300	5,6-5,7	0,95-1,35	0,35(0,59)		
1000	11,6+0,1		0,55(0,7)			
				·		

Adjust the fuel delivery from each outlet according to the values in [

B. Governor Settings

Upper rated s	peed		Intermediate	rated sp	eed	Lower rated	speed	•	Stiding s	leeve travel
	rev/min Control	Control rod ta	Degree of deflection		Control rod travel	Degree of deflection		Control rod travel		0
of control	rod travel	mm rev/min (2a)	of control lever	rev/min	mm (4)	of control lever	ten/win	mm ③	tea/win	mm
1	2	3	4	5	6	7	8	9	10	11
max.	1100	15,2-17,8				ca. 11	300	5,6-5,7		
	1350	0 - 1,0					100	min. 7,2		
ca. 46	10,6 4,0	1140-1150 1190-1220				3	380-	440 = 2,0		

Torque control travel a =

mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load d Control-ro Test oil ter	d stop np. 40°C (104°F) 2	limitation intermediate speed	high idle s		Idle switchir	ng paint	travel	control (5) Control rod travel
rev/min	cm³/1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min 8	9 mm
700	100-102 (98,0-104,0)	1140-1150*	1000	101,0-105,0 (99,0-107,0)	300	min. 140,0 9,5-13,5 (7,0-16,0) 220 (0-250)		

Checking values in brackets

* 1 mm less control rod travel than col. 2

Test Specifications Fuel Injection Pumps 1 and Governors

WPP 001/4 IHC 7,6 a 1

2. Edition

PES 6 MW 100/320 RS 1103 RQV 350-1300 MW 43 0 403 446 131 supersedes12.82 company: IHC engine. DT 466 B 154,5 kW (210 PS)

Nozzle-and-holder assembly 1 688 901 016 (207 + 3 bar)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Rotational speed fev/min	travel v/min mm cm³/100 strokes 2 3		Difference cm ³ / 100 strokes 4	Control rod travel mm	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
900 350 1300 500	11,9+0,1 6,0-6,2 11,9+0,1 9,6+0,1	1,6-2,0	0,35(0,6) 0,35(0,55) 0,65(0,7)	1		

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

deflection	rev/min Control rod travel	Control rod ta travel mm rev/min 28	Intermediate Degree of deflection of control lever	rated spo rev/min 5	Control rod travel mm 4	Lower rated Degree of deflection of control lever 7	rev/min	Control rod travel	Sliding s rev/min 10	mm
max.	8,0 0-1	1440 1600	-	-	-	ca.14	1		350 450	1,6 2,5 -2, 8 7,5
ca.62,5	4,0	1475-1485			·	370-650	ł	•	1350	7,5
						39				

Forque control travel a =

WW

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load d Control-ro Test oil ten		Rotational-speed (2b) (imitation intermediate speed		rery characteristics (5a)	Starting Idle switchin	. •	Torque- traval	Control rod
rgy/min	cm³/1000 strokes	rev/min 49	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min 8	travel mm 9
LDA 900	0,9 bar 103,0-105,0 (101,0-107,0)		LDA 1300 LDA 500	(105,0-113,0) 0 bar 63,5-65,5	350	19-21 mm RW 140-180 16,0-20,0 (13,5-22,5) 80(210-290)		

Checking values in brackets

* 1 mm less control rod travel than col. 2

9.83

Testoil-150 4113

Testatn =

500

rev/min decreasing pressure - in bar gauge pressure

IHC 7,6 a 1 -2-

Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure = ba	Gauge pressure = bar	mm (1) .
RS 1103 + RSV MW 43	0,51	0,9 0 0,28	11,3 - 11,4 11,9 - 12,0 9,6 - 9,7 10,4 - 10,5

Notes

(1) when n =

rev/min and gauge pressure =

bar (= maximum full-load control rod travel)

Please note:

- Carry pump adjustment only with overflow valve 1 417 413 040 and It se with throttle 1.2 mm diameter.
- Set locking device before testing position of sliding device.
- In unlocked condition do not operate at a speed higher than $n = 500 \text{ min}^{-1}$.
- Set lower idle speed at stop screw.
- Set shutoff stop 1.5 2.0 mm in front of the stop.

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 IHC 7,6 c 3. Edition

En

PES 6 MW 100/320 RS 1103 RQV 350-1300 MW 43-1 0 403 446 132 company IHC-USA engine. DT 466 B 143.4 kW (195 PS)

Nozzle-and-holder assembly 1 688 901 016 (207 + 3 bar)

1 000 301 010 (207 + 3 0

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

4,00-4,10 (3 95-4 15) mm (from BDC)RW = 9,0 - 12,0 mm

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm³/ 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
900	10,9+0,1	9,55-9,75	0,35(0,6)			
350	5,7-5,8	1,6 - 2,0	0,35(0,55			
1300	10,9+0,1					
500	9,4-9,5		0,65(0,7)			
			<u> </u>		<u></u>	

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated s	peed		Intermediate	rated sp	eed	Lower rated	speed	•	Sliding s	leeve travel
deflection of control	rev/min Control rod travel	Control rod travel	of control		Control rod travel	Degree of deflection of control		Control rod travel		1
lever 1	mm 2	rev/min (2)	lever 4	rev/min 5	mm (4)	lever 7	e te∧\tulu	mm (3)	rev/min	11
max.	8,0 0-1	1355 1550	-	-	-	ca. 13		min.9,0 5,8-6,0		
ca.61,5	4,0	1470-1480				360-700		•		
	<u> </u>	l			<u> </u>	3			<u> </u>	

Torque control travel a =

mm

C. Settings for Fuel injection Pump with Fitted Governor

Full-load d	d stop	timitation	Fuel deliv	rery characteristics 5a	Starting Idle switchir	\circ	Torque-control 5 travel	
rev/min	np. 40°C (104°F) (2) cm³/1000 strokes 2	rev/min 4a	rev/min	cm ³ /1000 strokes	l	cm ³ /1000 strokes	rev/min 8	Control rod travel mm
LDA 900	0,9 bar 95,5-97,5 (93,5-99,5)		LDA 1300 LDA 500	0,9 bar 96,5-100,5 (94,5-102,5) 0 bar 63,5-65,5 (61,5-67,5)		19-21 mm RW 140-180 16,0-20,0 (13,5-22,5) 80 (210-290)		

Checking values in brackets

* 1 mm less control rod travel than col. 2

Pump/governor	Setting	Measurement	diminution Control rod travel difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1) .
RS 1103 + RQVMW 43-1	0,4	0,9 0 0,2	10,5 - 10,6 10,9 - 11,0 9,4 - 9,5 9,8 - 9,9

Notes

_ (1) when n =

rev/min and gauge pressure =

bar (= maximum full-load control rod travel)

Please note:

- Carry out pump adjustment only with overflow valve 1 417 413 040 and IH hose with throttle 1,2 mm diameter.
- Set locking device before testing position of sliding device.
- In unlocked condition do not operate at a speed higher than $n = 500 \text{ min}^{-1}$.
- Set lower idle speed at stop screw.
- Set shutoff stop 1.5 2.0 mm in front of the stop.

Test Specifications Fuel Injection Pumps 1 PP 001/4 PER 10,0 r and Governors

1. Edition

PES 8 MW 100/720 RS 1106 RQV 275-1125 MW 40 0 403 448 118

①

Testoil-ISO 4113

supersedes-

company: Perkins **V8.640 GR**

147 kW

Port-closing mark on rear side

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Rotational speed	Control rod travel	Fuel delivery cm ³ /100 strokes	Difference cm ³ / 100 strokes	Control rod travel mm	Fuel delivery cm ³ /100 strokes	Spring pre-tensioning (torque-control valve)
<u> </u>	2	3	4	2	3	6
800	10,7+0,1	9,05-9,25	0,35(0,6)			
275	6,2-6,4	1,35-1,75	0,35(0,55			
	}		1			

Adjust the fuel delivery from each outlet according to the values in [

B. Governor Settings

Upper rated	speed		Intermediat	e rated sp	eed	Lower rated	speed		Slidings	leeve travel
Degree of deflection of control lever		Control rod travel mm rev/min 28	of control	rev/min 5	Control rod travel mm 4	Degree of deflection of control lever	rev/min 8	Control rod travel mm 3	rev/min	mm 11
max.	1190 1350	15,2-17,8 0 - 1,0				ca.11	100 275	min.7,7 6,2-6,4		
ca.62	9,7	1175-1185 1220-1250				300-500				
						3a)				

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load of Control-ro Test oil te		Rotational-speed 2b limitation intermediate speed			Starting Idle switchin		Torque- travel	control 5
rev/min	cm ³ /1000 strokes	rev/min 4£	rev/min	cm³/1000 strokes	rev/min	cm³/1000 strokes	rev/min	travel mm
1	2	3	4	5	6	7	8	9
800	90,5-92,5 (88,5-94,5)	1175-1185*			100	min. 140		

Checking values in brackets

* 1 mm less control rod travel than col. 2

Port closing and TDC markerings

Comb.- No. ... 110

°camshaft between port closing and TDC

at control-rod travel 9,0 -12,0 mm 15°

Test Specifications Fuel Injection Pumps (1A) and Governors

WPP G01/4 KHD 30,4 c 1. Edition

PE12 P120 A920/5 RS 294

RSU 300/1000 POA 331 R

BA 12 M 816

1-10-5-7-2-11-6-8-3-12-4-9 je $30^{\circ} \stackrel{+}{-}0,5^{\circ} (\stackrel{+}{-}0,75^{\circ})$

kombin.-Nr. 0 401 870 058

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

mm (from BDC) =RW 9,0-12,0 mm

Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm 2	cm ³ /100 strokes 3	cm³/ 100 strokes 4	mm 2	cm ³ /100 strokes	mm 6
750	14.9+0.1	31.0-31.4	0,5(0,9)			
300	6,3-6,5	2,2-2,8	0,8(1,2)			

Adjust the fuel delivery from each outlet according to the values in \Box

B. Governor Settings

1	r rated speed Control rod travel mm	i	Intermed	hate rated	speed	Control- lever deflection in degrees 7		rated speed Control rod travel mm	3 To	rque control Control rod travel mm
loose,	800 X=	0,3-1,0		•	-		300 300 360-400	6,4 6,3-6,5 = 2,0	360	14,9-15,0 16,2-16,8 14,9-15,0
23	4,0	1040-1050 1130-1160 0,3-1,7					300-400	- 2,0		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

	H-load stop	6 Rotational- speed limitat	ational- ed limitat 3a Fuel delivery characteristics			Starting fuel delivery 5 4a Idle stop				
rey/min	cmp. 40°C (104°F) cm-/1000 strokes	Note: changed to) rev/min 3	rev/min 4	cm ³ /1 000 strokes 5 .	rev/min	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm 9		
Not kn	own. out adjustment	1040-1050*		•	100	19,5-21,0 mm RW	· -	-		
on eng										
	;									

Checking values in brackets

* 1 mm less control rod travel than col. 2

6.83

eschäftsbereich KH. Kundendienst. Kfz-Ausrüstung. 1980 by Robert Bosch GmbH. Postfach 50, D-7000 Stuttgart 1. Printed in the Federal Republic of Germany iorimé en République Fédérale d'Allemagne par Robert Bosch GmbH.

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 IHC 7,6 b 1

2. Edition

PES 6 MW 100/320 RS 1107 RQV 350-1200 MW 43

0 403 446 135

supersedes 12.82

company: IHC - USA

engine. DTC 466 B

121,3 kW (165 PS)

Nozzle-and-holder assembly 1 688 901 016 (207 + 3 bar)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

4,00-4,10
Port closing at prestroke (3,95-4,15) mm (from BDC)RW = 9,0-12,0 mm

Rotational speed		Fuel delivery cm ³ /100 strokes	Difference cm ³ / 100 strokes	Control rod travel mm	Fuel delivery cm ³ /100 strokes	Spring pre-tensioning (torque-control valve)
1	2	3	4	2	3	6
800	11,1+0,1	8,4 - 8,6	0,35(0,6)			1
350	5,9-6,1	1,6 - 2,0	0,35(0,55)		
1200	11,1+0,1		0,65(0,7)			
500	9,8+0,1					
1				1		

A∃just the fuel delivery from each outlet according to the values in _____

B. Governor Settings

Upper rated s	peed			Intermediate	rated spe	ed	Lower rated	speed	1	Sliding sl	eeve travel
Degree of deflection of control	rev/min Control ថេងម៉ូនvel ៣៣ 2	Control rod travel mm rov 6	(9) (28)	Degree of deflection of control lever	rev/min	Control rod travel mm 4	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 3	res/min 10	mm 11
max.	8,0 0-1	1355 1450		-	-	-	ca. 14	1	min.9,0 5,9-6,1	350 450 1350	1,6 2,5 - 2,8
ca.60,5	4,0	1365-1	375				370-650	i	, ,	1990	7,5
							39				

Torque control travel a =

mm

C. Settings for Fuel Injection Pump with Fitted Governor

Control-ro	pad delivery rol-rod stop pal temp. 40°C (104°F) Rotational-speed (2b) limitation intermediate speed		Fuel deliv	rery characteristics (5a)	Starting didle switching		Torque- travel	Control rod travel
rev/min	cm³/1000 strokes	rev/min 48	rev/min	cm ³ /1000 strokes 5	rev/min	cm³/1000 strokes 7	rev/min 8	mm 9
LDA 800	0,9 bar 84,0-86,0 (82,0-88,0)		LDA 1200 LDA 500	0,9 bar 86,5-90,5 (84,5-92,5) 0 bar 61,5-63,5 (59,5-65,5)	100 350 220-2	19-21 mm RW 140-180 16,0-20,0 13,5-22,5) 280(210-290)		

Checking values in brackets

* 1 mm less control rod travel than col. 2

-2-

Testatn =

500

rev/min increasing pressure - in bar gauge pressure

IHC 7,6 b 1

Pump/governor	Setting		Measurement		diminution Control rod travel- difference
	Gauge pressure =	bar	Gauge pressure =	bar	mm (1) .
RS 1107 +					
RQV MW 43	0,3				10,8 - 10,9
			0,9		11,1 - 11,2
	į		0		9,8 - 9,9
			0,13		10,1 - 10,2

Notes

(1) when n =

rev/min and gauge pressure =

bar (= maximum full-load control rod travel)

Please note.

- Carry out pump adjustment only with overflow valve 1 417 413 040 and IH hose with throttle 1,2 mm diameter.
- Set locking device before testing position of sliding device.
- In unlocked condition do not operate at a speed higher than $n = 500 \text{ min}^{-1}$.
- Set lower idle speed at stop screw.
- Set shutoff stop 1.5 2.0 mm in front of the stop.

Test Specifications Fuel Injection Pumps 1 and Governors

WPP 001/4 IHC 7,6d

PES 6 NW 100/320 RS 1107 RQV 350-1200 MW 43-2 0 403 446 136

supersedes 12.82 company: IHC-USA DT 466 B

Edition

engine.

132,4 kW (180 PS)

Nozzle-and-holder assembly 1 688 901 016 (207 + 3 bar)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

11,8-11,9

10,4-10,5

Port closing at pres	stroke	(3.95-4.15)	mm (from BDC)	KW 9,0-	12,0 mm	
Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm	cm ³ /100 strokes	cm³/ 100 strokes	mm	cm ³ /100 strokes	mm 6
1	2	3		-	13	
800	11,8+0,1	9,45-9,65	0,35(0,6)			
350	5,9-6,1	1,6-2,0	0,35(0,55			

0,65(0,7)

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

1200

50C

Upper rated s	peed		Intermediate	rated sp	eed	Lower rated	speed	•	Stiding s	leeve travel
deflection	rev/min Control rod trave	Control rod travel	Degree of deflection of control		Control rod travel	Degree of deflection of control		Control rod travel		0
lever	mm	rav/min (2a	lever	rev/min	mm (4)	lever	rev/min	mm (3)	tea/wiu	ww
1	2	3	4	5	6	7	8	9	10	11
max.	8,0 0,1	1355- 1500	_	-	-	ça. 15		min.9,0 5,9-6,1		
ca.61,5	4,0	1375-1385				370-650				·
						3 a				

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-ros Test oil ten		limitation intermediate speed	high idle s	rery characteristics (58)	Starting Idle switchir		Torque- travel	Control 5 Control rod
rev/min	cm³/1009 strokes	rev/min 4a)	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	mm
,	2	3	4	5	6	7	8	9
LDA 800	0,9 bar 94,5-96,5 (92,5-98,5)		LDA 1200 LDA 500	0,9 bar 96,0-100,0 (94,0-102,0) 0 bar 70,0-72,0 (68,0-74,0)	350	19-21 mm RW 140,0-180,0 16,0-20,0 (13,5-22,5) 80 (210-290)		

Checking values in brackets

* 1 mm less control rod travel than col. 2

Test at n = 500 rev/min decreasing pressure - in bar gauge pressure

IHC 7,6 d

-2-

Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1) .
RS 1107 +			
RQVMW 43-2	0,39		11,5 - 11,6
		0	10,4 - 10,5
		0,9	11,8 - 11,9
		0,17	10,7 - 10,8

Notes

(1) when n =

rev/min and gauge pressure =

bar (= maximum full-load control rod travel)

Please note:

- Carry out pump adjustment only with overflow valve 1 417 413 040 and IH hose with throttle 1,2 mm diameter.
- Set locking device before testing position of sliding device.
- In unlocked condition do not operate at a speed higher than $n = 500 \text{ min}^{-1}$.
- Set lower idle speed at stop screw.
- Set shutoff stop 1.5 2.0 mm in front of the stop.

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 IHC 7,6 e

2. Edition

En

PES 6 MW 100/320 RS 1108 RQV 350-1200 MW 43-3

0 403 446 137

Testor-150 4113

company IHC-USA engine DT 466 B

132,4 kW (180 PS)

Nozzle-and-holder assembly 1 688 901 016 (207 + 3 bar)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

3,00-3,10

A. Fuel Injection Pump Settings

	rev/min	mm 2	cm ³ /100 strokes	cm ³ / 100 strokes 4	mm 2	cm³/100 strokes 3	mm 6
	800	11,5+0,1	9,05-9,25	0,35(0,6)			
۱	350	6,2-6,3	1,6 -2,0	0,35(0,55)			
١	1200	11,5+0,1		p,65(0,7)	l i		
	500	10,0+0,1		1			
Ì	1	•			1		ļ

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated s	peed						Sliding sl	eeve travel					
deflection of control		travel		Degree of deflection of control lever	rev/min	Control rod travel mm (6	•	Degree of deflection of control lever 7	rev/min 8	Control ro travel mm 9	od 3	rev/min	mm 11
max.	8,0 0,1	1360 1450		-	-	-		ca. 17		min.9, 6,2-6,			
ca.60,5	4,0	1380-139	90	·				370-650 3a					

Torque control travel a ~

mit

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load d		Rotational-speed 20	Fuel deliv	very characteristics 5a	I IQIO	•	Torque-control 5	
	np. 40°C (104°F) (2) cm³/1000 strokes	intermédiate speed rev/min	rev/min			ng point cm³/1000 strokes	rev/min	Control rod travel mm
l,	2	3	4	5	6	7	8	9
LDA 800	0,9 bar 90,5-92,5 (88,5-94,5)		LDA 1200 LDA 500	0,9 bar 93,0-97,0 (91,0-99,0) 0 bar 60,0-62,0 (58,0-64,0)	350 220 <i>-</i> 2	19,0-21,0 RW 140-180 (137-183) 16,0-20,0 (13,5-22,5) 80(210-290)	-	

Checking values in brackets

* 1 mm less control rod travel than col. 2

Test at n =

500

rev/min increasing pressure - in bar gauge pressure

IHC 7,6 e

Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure =	har Gauge pressure =	par mm (1) .
RS 1108 + RQV MW 43-3	0,42	0,9 0 0,19	11,1 - 11,2 11,5 - 11,6 10,0 - 10,1 10,3 - 10,4

Notes

(1) when n =

rev/min and gauge pressure =

bar (= maximum full-load control rod travel)

Please note:

- Carry out pump adjustment only with overflow valve 1 417 413 040 and IH hose with throttle 1,2 mm diameter.
- Set locking device before testing position of sliding device.
- In unlocked condition do not operate at a speed higher than $n = 500 \text{ min}^{-1}$.
- Set lower idle speed at stop screw.
- Set shutoff stop 1.5 2.0 mm in front of the stop.

Test Specifications Fuel Injection Pumps 1 and Governors

WPP 001/4 IHC 7,6 f

3. Edition

mm (from BDC) RW = 9.0-12.0 mm

PES 6 MW 100/320 RS 1108 RQV 350-1300 MW 43-4 0 403 446 138

supersedes 12.82 company: IHC

DT 466 B engine:

154,5 kW (210 PS)

Nozzle-and-holder assembly 1 688 901 016 (207 + 3 bar)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel injection Pump Settings

Port closing at pre	SUOK O	(2,95-3,15)			1	
Rotational speed	Control rod	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm	cm ³ /100 strokes	cm³/ 100 strokes 4	mm 2	cm²/100 strokes	тю 6
900	12,6+0,1	10,7-10,9	0,35(0,6			
350	6,5-6,6	1,6-2,0	0,35(0,5)		

0,65(0,7)

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

12,6+0,1

9,6+0,1

1300

500

Upper rated s	peed	······································		Intermediate	rated spe	ed	Lower rated	speed	1	Sliding s	leeve travel
Degree of deflection of control	rev/min Control rod travel mm	travel		Degree of deflection of control lever	rev/min	Control rod trave; mm 4	Degree of deflection of control lever	rev/min 8	Control rod travel mm 3	rev/min	(1) mm 11
max.	8,0 0-1	1440 1580		-	-	-	ca.16	100 350	min.9,0 6,1-6,2		
ca.61,5	4,0	1500-151	0				370-650				
							(3a)				

Torque control travel a =

mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-roc Test oil ten		Rotational-speed 20 timitation intermediate speed	Fuel deliv	ery characteristics 5a peed 5b	Starting Idle switchin		Torque- travel	Control S Control roc travel
rev/min	. •	rev/min 49	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	mm 9
LDA 900	0,9 bar 107,0-109,0 (105,0-111,0)		LDA 1300 LDA 500	0,9 bar 112,5-116,5 (110,5-118,5) 0 bar 53,5-55,5 (51,5-57,5)	350	19-21 mm RW 140,0-180,0 16,0-20,0 (13,5-22,5) 280 (210-290)		

Checking values in brackets

1 mm less control rod travel than col. 2

Test at n = 500 rev/min decreasing pressure - in bar gauge pressure

IHC 7,6 f -2-

Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure = bar	Gauge prossure a bar	mm (1) .
RS 1108 +	0,57	,	11,9 - 12,0
RQV MW 43-4		0,9	12,6 - 12,7
		0	9,6 - 9,7
		0,27	10,4 - 10,5
	,		

Notes
(1) when n =

rev/min and gauge pressure =

bar (= maximum full-load control rod travel)

Please note:

- Carry out pump adjustment only with overflow valve 1 417 413 040 and IH hose with throttle 1,2 mm diameter.
- Set locking device before testing position of sliding device.
- In unlocked condition do not operate at a speed higher than $n = 500 \text{ min}^{-1}$.
- Set lower idle speed at stop screw.
- Set shutoff stop 1.5 2.0 mm in front of the stop.

Test Specifications Fuel Injection Pumps 1 and Governors

WPP 001/4 IHC 7,6 g

3. Edition

PES 6 MW 100/320 RS 1108 ROV 350-1200 MW 43-5 0 403 446 139

supersedes .63 company IHC engine DT 466 B 121,4 kW (165 PS)

Nozzle-and-holder assembly 1 688 901 016 (207 + 3 bar)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at pres Rotational speed	Control rod travel	(2,95-3,15) Fuel delivery	mm (from BDC)	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min 1	mm 2	cm³/100 strokes 3	cm³/ 100 strokes 4	mm 2	cm³/100 strokes 3	កាកា 6
800	10,5+0,1	8,3-8,5	0,35(0,6)			
350	5,8-5,9	1,6-2,0	0,35(0,55			
1200	10,5+0,1		0,65(0,7)]	
500	9,2-9,3	1				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated a	peed		Intermediate	e rated sp	eed	Lower rated	speed	•	Stirting s	leeve travel
	Control rod travel	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel	Degree of deflection of control lever	rev/min	Control rod travel	rev/min	mm (1)
1	2	3	4	5	6	7	8	9	10	11
max.	8,0 0-1	1360 1460	-	-	-	ca. 14		min. 9,0 5,8-5,9		
ca.58,5	4,0	1360-1370				360-640				
						3				

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load d Control-ro Test oil ter	d stop np. 40°C (104°F) 2	Ilmitation intermediate speed	Fuel deliv		Starting fuel delivery 6 Idle switching point		Torque- travel	Control od
rev/min	cm³/1000 strokes	rev/min 4e	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	mm
1	2	3	4	5	6	7	8	9
LDA 800	0,9 bar 83,0-85,0 (81,0-87,0)		LDA 1200 LDA 500	0,9 bar 88,5-92,5 (86,5-94,5) 0 bar 59,0-61,0 (57,0-63,0)	100 350 220-	19-21 mm RW 140-180 16,0-20,0 (13,5-22,5) 280 (210-290)		

Checking values in brackets

* 1 mm less control rod travel than col. 2.

9.83

BOSCH

Testain =

500

rev/min decreasing pressure ~ in bar gauge pressure

IHC 7,6 g

Pump/governor	Setting	Measurement	Control rod travel	diminution difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1)	,
RS 1108 +				
RQV MW 43-5	0,9		10,5	- 10,6
		0	9,2	- 9,3
		0,2	9,7	- 9,8
		0,34	10,2	- 10,3
•				

Notes

(1) when n =

rev/min and gauge pressure =

bar (maximum full-load control rod travel)

Please note:

- Carry out pump adjustment only with overflow valve 1 417 413 040 and IH hose with throttle 1,2 mm diameter.
- Set locking device before testing position of sliding device.
- In unlocked condition do not operate at a speed higher than $n = 500 \text{ min}^{-1}$.
- Set lower idle speed at stop screw.
- Set shutoff stop 1.5 2.0 mm in front of the stop.

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 IHC 7,6L 2. Edition

supersects 83

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PES 6 MW 100/320 RS 1108 RQV 350-1300 MW 45

0 403 446 140

ぐり

companIHC engine DT 466 B and-holder assembly 143,5 kW

Nozzle-and-holder assembly 1 688 901 016 (207 + 3 bar)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

(2,95-3,15) mm (from BDQW = 9 - 12 mm

Rotational speed | Control rod travel | Fuel delivery | Cm²/100 strokes
re	v/min	mm 2	3	4	2	3	6
	350	11,7+0,1 5,9-6,0 11,7+0,1 9,0-9,1	1,6-2,0	0,35(0,6 0,35(0,5 0,65(0,7	5)		

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated s	peed		Intermedial	e rated sp	eed	Lower rated	speed		Stiding s	leeve travel
deflection of control	Control rod travel	Control rod (18 mm rev/min (28	of control	rev/min 5	Control rod travel mm 4	Degree of deflection of control lever 7	rev/min 8	Control rod traval mm 3	rev/min 10	mm 11
max.	8,0 0,1	1440-1505 1550	-	-	-	ca.14		min. 9,0 5,9-6,0		
ca.61,5	10,8	1360-1380 1475-1485				380-700				
						30				<u> </u>

Torque control travel a =

шm

C. Settings for Fuel Injection Pump with Fitted Governor

	d stop np. 40°C (104°F) 2	imitation intermediate speed	Fuel delivery characteristics 58 high idle speed 5b cm³/1000 strokes		Starting fuel delivery 6 Idle switching point rev/min cm³/1000 strokes		Torque- travel	control 5 Control rod travel
rev/min	cm ³ /1000 strokes	rev/min 3	rev/min 4	5	6	7	8	9
LDA 900	0,9 bar 95,5-97,5 (93,5-99,5)	1360-1380*	LDA 1300 LDA	0,9 bar 99,5-103,5 (97,5-105,5) 0 bar 52,5-54,5 (50,5-56,5)	350	RW 19-21 140-180 137-183) 16,0-20,0 13,5-22,5) 280(210-290)		

Checking values in brackets

1 mm less control rod travel than col. 2

Test at n #

500

rev/min increasing pressure ~ in bar gauge pressure

IHC 7.6 1

-2-

Pump/governor	Setting Gauge pressure = bar	Measurement Gauge pressure = bar	diminution Control rod travel- difference
RS 1108 + MW 45	0,9	0 0,2 0,57	11,7 - 11,8 9,0 - 9,1 9,5 - 9,6 11,2 - 11,3

Notes

(1) when n =

rev/min and gauge pressure =

bar (= maximum full-load control rod travel)

Please note:

- Carry out pump adjustment only with overflow valve 1 417 413 040 and IH hose with throttle 1.2 mm diameter.
- Set locking device before testing position of sliding device.
- In unlocked condition do not operate at a speed higher than $n = 500 \text{ min}^{-1}$.
- Set lower idle speed at stop screw.
- Set shutoff stop 1.5 2.0 mm in front of the stop.

Test Specifications Fuel Injection Pumps 1 and Governors

WPP 001/4 IHC 7,6 n 1. Edition

PES 6 MW 100/320 RS 1112 ROV 350-1300 MW 46 0 403 446 141

supersedes companJHC

engine DTI-466 C

Nozzle-and-holder assembly 1 688 901 016 (207 + 3 bar) 154,5 kW

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel injection Pump Settings 4 00-4 10

Port closing at pres	troke	4,00-4,10 mm (from BDC)RW = 9,0-12,0								
Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)				
rev/min	mm	cm ³ /100 strokes	cm³/ 100 strokes	mm	cm³/100 strokes	mm				
1	2	3	4	2	3	6				
900	0,5+0,1	10,3-10,5	0,35(0,6)			_				
350	5,2-5,3	1,6-2,0	0,35(0,55	•						
1300	10,5+0,1		0,65(0,6)							
500	8,4+0,1					<u> </u>				

Adjust the fuel delivery from each outlet according to the values in [

B. Governor Settings

Upper rated s	peed		Intermediate	rated sp	eed	Lower rated	speed	1	Sliding s	leeve travel
deflection of control	rev/min Control rod travel	Control rod (a) travel mm (2a)	Degree of deflection of control lever	rev/min	Control rod travel	Degree of deflection of control lever	rev/min	Control rod travel		(1)
lever 1	2	3	4	5	6	7	8	9	10	11
max.	8,0	1440-1505				ca. 14	100	min.9,0		
	0-1	1600					35 0	5,2-5,3		
ca.48,	4,0	1490-1500				370-650 ③				

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load d Control-ro Test oil ter		timitation intermediate speed	high idle s	peed 5b	Starting Idle swiftshir		र्गावपर्व- travel	Control Control rod
rev/min	cm ³ /1000 strokes	rev/min 40	rev/min	cm³/1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	mm
1	2	3	4	5	6	7	8	9
LDA 900	0,9 bar 103,0-105,0 (101,0-107,0		LDA 1300 LDA 500	0,9 bar 107,0-111,0 (105,0-113,0) 0 bar 63,5-65,5 (61,5-67,5)	350	RW 19-21 140-180 (137-183) 16,0-20,0 (13,5-22,5) 280(210-290)		

Checking values in brackets

* 1 mm less control rod travel than col. 2

9.83

105/03/100 A140

D. Adjustment Test for Manifold Pressure Compensator

rev/min decreasing pressure - in bar gauge pressure increasing Testatn = IHC 7,6 n -2≈ 500 diminution Setting Measurement Pump/governor Control rod travel difference mm (1) bar Gauge pressure = Gauge pressure = 10,5-10,6 0,9 bar RS 1112 8,4-8,5 0 MW 46 0,28 9,0-9,1 10,0-10,1 0,51

Notes

(1) when n =

rev/min and gauge pressure =

bar (= maximum full-load control rod travel)

Please note:

- Carry out pump adjustment only with overflow valve 1 417 413 040 and IH hose with throttle 1.2 mm diameter.
- Set locking device before testing position of sliding device.
- In unlocked condition do not operate at a speed higher than $n = 500 \text{ min}^{-1}$.
- Set lower idle speed at stop screw.
- Set shutoff stop 1.5 2.0 mm in front of the stop.

Test Specifications Fuel Injection Pumps (A) and Governors

WPP 001/4 PEN 10,0 d 1 2. Edition

En

PE 6 P 110 A 320 RS 138 Komb.-Nr. 0 401 876 104 RSV 200-900 P 1/305 R

supersedes 3.83 Volvo-Penta

engine

MD_100 B 114 kW (155 PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings 2,6 - 2,7 Port closing at prestroke (2,55-2,75)

Testoil-ISO 4113

mm (from BDC)

Control rod	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
mm 2	cm ¹ /100 strokes	cm ³ / 100 strokes 4	നന്ദ 2	cm³/100 strokes	mm 6
9,3-9,4	10,9-11,1	0,4 (0,8)			
5,4-5,5	1,0-1,4	0,3 (0,6)			
	mm 2 2 9,3-9,4	travel mm 2 cm ^{1/100} strokes 3 9,3-9,4 10,9-11,1	travel cm ³ /100 strokes cm ³ /100 strokes 4 9,3-9,4 10,9-11,1 0,4 (0,8)	mm 2 cm ^{1/1} 100 strokes cm ^{3/1} 100 strokes mm 2 9,3-9,4 10,9-11,1 0,4 (0,8)	Control rod travel mm 2 cm ³ /100 strokes cm ³ /100 strokes 4 cm ³ /100 strokes 2 9,3-9,4 10,9-11,1 0,4 (0,8)

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

1 Uppe	r rated speed		Interme	ediate rat	ed speed	4	Lower	rated speed Control rod	3 ¹⁰	rque control Control rod
Degree of deflection of control tever	Control rod travel mm	Control rod travel mm rev/min	4	5	6	Control- lever deflection in degrees 7	rev/min	travel mm	rev/min	travel mm
loose	800	0,3-1,0	-		+	ca. 29	225	5,0	-	-
10036	x =	6,0					225	5,4-5,5		
ca.55	8,3 4,0 1150	940-950 980-1010 0,3-1,7					310-37			

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

ピツ	II-load stop	6 Rotational- speed limitat.	11.724 1	uel delivery naracteristics	Starting f	uel delivery 5	Idle stop		
Test oil (6 rev/min 1	emp. 40°C (104°F) cm³/1000 strokes 2	changed to) rev/min 3	rev/min	cm³/1000 strokes 5	rev/min	cm³/1000 strokes 7	rev/min 8	travel mm 9	
700	109,0-111,0 (106,0-114,0)	940-950*	-	•	100	310,0-330 = RW 20,0 21,0 mm		-	

Checking values in brackets

* 1 mm less control rod travel than col. 2

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estoil-ISO 4113

Test Specifications Fuel Injection Pumps and Governors

WPP 001/4 VOL 12,0 a

5. Edition

PE 6 P 110 A 320 RS 141

ROV 200-1100 PA 103/2R

Volvo company

RS141.Z.Y

250-1100 PA 234/2R

TD 120

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings 2,6 + 0,1

Port closing at prestroke

mm (from BDC)

Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
vev/min	mm	cm ³ /100 strokes	100 strokes	mm 2	cm ³ /100 strokes 3	mm 6
1000	12	17,9 - 18,7	0,6		,	2,5 ⁺ 0,1 ** (max.2,2-2,9)
600	6 12 15	3,2 - 4,2 17,3 - 18,8 23,5 - 25,3				
200	5	1,1-2,1				

Adjust the fuel delivery from each outlet according to the values in

In the case of greater dispersion alter the delivery-valve spring pre-tension RQV .. 103/2R mit 141

B. Governor Settings

Upper rated s	peed		Intermediate	rated spe	eed	Lower rated	speed		Stiding sleeve travel	
Degree of deflection of control lever	rev/min	Control rod travel	Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min B	Control rod travel mm 9	rev/min	mm 11
ca. 68	1150 1410 1100 1200 1260 1400	0 15,0-18,0 7,2-12,6 2,0-9,0				ca.23	100 200 300 400 460	7,0-10,0 5,0-8,4 2,4-5,2 0 -2,2 0	200 500 1150	1,5-2 3,6-4 8,3

Torque control travel a = abnorm. sldg-sleeve pos'n = 36,0 mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load d Control-ro Test oil ler		Rotational-speed limitation	Fuel deliv	very characteristics	Starting Idle switchir	fuel delivery ng point	Intermediate rotational speed Torque-control travel	
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm³/1000 strokes 5	rev/min	cm ³ /1000 strokes 7	rev/min 8	mm
LDA 700	0,7 bar 181,0-183,0	1150	LDA 700	0 bar 124,0-127,0	100 200 Stre	390 - 410 17 - 21 *		
(incr	ease by ± 1,0	cm³)					<u> </u>	./.

Checking values in brackets 4

* 1 mm less control rod travel than col 2

7.83

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B. Governor Settings

Upper rated s	speed			Intermediate	rated spe	ed .		Lower rat	ted s	peed			Sliding sli	eve travel
Degree of deflection of control lever	rev/min	Control rod travel mm rev/min		Degree of deflection of control lever	rev/min	Control ro travel mm	d •	Degree o deflection of contro lever	ר. י	rev/min	Control travel mm		rev/min	mm 11
1	2	3		-	1	1		ca. 1	2	100	9.0-	11 0	350	1,4-2,0
ca.50	1170 1400	15,0-18	3,3					ca. 1	3	200	7,2-	9,9	650	3,7-4,0
ca.45	1100 1200	15,0-17								300 400	4,0- 0 -	6,9 2,8	1170	8,3
	1280	0 -6						Ì		490	0	•	-	-
	1360	0						(3a)						

Torque control travel a = ____ mn

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load d Control-ro Test oil ter		Rotational-speed (2b) limitation intermediate speed	Fuel deln high idle s	rery characteristics(5a) speed (5b)	Starting Idle switchin	fuel delivery (6) ng point	travel	Control rod
rev/min	cm³/1000 strokes	rev/min 4a	rev/min	cm³/1000 strokes 5	rev/min	cm ³ /1000 strokes	rev/min 8	mm 9
LDA 700	0,7 bar 181,0-183,0	1160-1170*	LDA 700	0 bar 124,0-127,0	100 250 Street	390 - 410 11 - 15 ug.max.2,5)	**	
						73		

Checking values in brackets

* 1 mm less control rod travel than col. 2

B. Governor Settings

RQV .. 234/2R mit 141Z

Upper rated s	peed		Intermediate	rated spe	ed	Lower rated	speed		Sliding sl	eeve travel
Degree of		Control rod (1a)	Degree of deflection	1	Control rod Itravel	Degree of deflection	!	Control rod travel		0
deflection of control lever	rod travel		of control lever	rev/min	mm (4	or control	rev/יחוו	mm 3	tea/win	mm
				5	6	7	8	9	10	11
ca. 50	1170 1400 1100 1200 1280	15,0-18,3 0 15,0-17,8 6,4-12,0 0 -6,2				ca.13	100 200 300 400 490	9,0-11,0 7,2-9,9 4,0-6,9 0 -2,8	350 650 1170	1,4-2,0 3,7-4,0 8,3
	1360	0				39				<u> </u>

Torque control travel a = ____ mn

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load d Control-ro Test oil ter	d ston	intermediate speed	Fuel deliv high idle s	ery characteristics 5a peed 5b	Starting I Idle switchin	\sim	travel	Control rod
revimin	cm ³ /1000 strokes	rev/min 3	rev/min	cm ³ /10 00 strokes 5	rev/min	7	rev/min 8	mm 9
LDA 700	0,9 bar 205,0-207,0	1160-1170*	LDA 700	0 bar 124, 0-127, 0	100 250 Stre	390 - 410 11 - 15 g.max.2,5)-	**	
							<u> </u>	<u></u>

E17

* 1 mm less control rod travel than col. 2

Checking values in bracket

0

B. Governor Settings

ROV .. 234/2R mit 141Y

Upper rated	speed		Intermed ate	rated spe	ed	Lower rated	speed	•	Slidina:sl	leeve travel
Degree of deflection of control	rev/min Control rod travel	Control rod travel	Degree of deflection of control lever		Control rod travel	Degree of deflection of control lever	rey/min	Control roc travel	rev/min	(1)
lever 1	mm 2	rev/min (28	4	rev/min 5	6 4	7	8	9	10	11
ca.50	1170 1400	15,0-18,3 0				ca.13	100 200	9,0-11,0 7,2-9,9	350 650	1,4-2,0 3,7-4,0
ca.45	1100 1200	15,0-17,8 6,4-12,0					300 400	4,0-6,9 0 -2,8 -	1170	8,3
	1280	0 -6,2					490	0	-	-
	1360	0				38			1	

Torque control travel a =

mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load d Control-roo Test oil ten		Rotational-speed (2b) timitation intermediate speed	Fuel deliv character high idle s	ristics	Starting Idle switchir	fuel delivery 6	forque- travel	Control rod
rev/min	cm³/1000 strokes 2	rev/min (4a)	rev/min 4	cm³/1000 strokes 5	rev/min 6	cm //1000 strokes 7	rev/min 8	· - -
LDA 700	0,7 bar 161,0-163,0	1160-1170	LDA 700	0 bar 116,0-119,0	100 250 Stre	390 - 410 11 - 15 19.max.2,5)		

Checking values in brackets

* 1 mm less control rod travel than co: 2

D. Adjustment Test for Manifold Pressure Compensator

Test atn =

 $_{\rm rey/min}$ decreasing pressure – in bar gauge pressure

Pump/gavernor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure = bar	Gauge pressure = bar	mm
141 mit 103/2R	0,48-0,50	0,12-0,22	
141 mit 234/2R	0,60-0,62	0,14-0,30	
141Z mit 234/2R	0,62-0,66	·	
		0,14-0,27	
141Y mit 234/2R	0,49-0,52	0,14-0,30	

WPP 001/4 FIA 13.8 a 9. Edition

En

PE 6 P 120 A 720 RS 167 Komb.-Nr. 0 401 846 225

RQ 225/1100 PA 118 R

supersedes 3.83 company: Fiat 221 A

Values only apply to test nozzle-and-holder assembly 1 688 901 019 and fuel-injection test tubing 1 680 750 067.

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

2.0-2,1 ort closing at prestroke (1,95-2,15) mrii (from BDC)

bott closing at brazi	IONA	(1,95-2,15)				
Rotational speed	Control rod travel	Fuel delivery	Difference cm ³ /	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
sou(min	mm	cm³/100 strokes	100 strokes	mm	cm ³ /100 strokes	mm
rev/min	2	3	4	2	3	8
1100	11,1+0,1	17,0-17,3	0,5(0,9)			
225	7,5-7,7	1,7-2,3	0,8(1,2)			
	1	Į				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Testoil-ISO

PRG chec	(1)	Full-load s Setting po	int	Test spec		idle spec Setting p			cifications 5	Torque c	Control rod
	Control rod travel mm	rev/min	Centrel red travel rnm 4	Central red travel mm	rev/min	rav/min 7	red barel		travel mm 10		travel mm 12
600	15,6-16,4	600	16,0	10,1 4,0 1359	1145-1160 1190-1220 0-1,0		7,6	100 225 365-	min. 9,1 7,5-7,7 405 = 2,0		11,1-11,2 11,1-11,3
L	<u></u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	L	 ;	1	160 min-1	<u> </u>	1 mm less control

Torque-control travel on flyweight assembly dimension a =

m Speed regulation: At

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

novernot (letivery on control lever inp. 40°C (104°F)	Control rod stop 3a	Control rod stop (3a) Fuel delivery characteristics		Idle spec	1 Carrier
rev/min	cm ³ /-1000 strokes 2	rev/min 3	rev/min 4	cm ² /-1000 strokes 5	rev/min 6	7
1100	170,0-173,0 (167,0-176,0)		-	-	100	19,0-21,0

Checking values in brackets

7.83

BOSCH

Testoil-ISO 411

Test Specifications
Fuel Injection Pumps 2
and Governors

40

WPP 001/4 FIA 13,8 a 4 3. Edition

En

PE 6 P 120 A 720 RS 167 Z Komb.-Nr. 0 401 846 345

RQ 225/1100 PA 118 R

supersedes 3.83 company: Fiat

221 A

Values only apply to test nozzle-and-holder assembly 1 688 901 019 and fuel-injection test tubing 1 680 750 067.

210 kW (286 PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

(1,95-2,15)

mm (from BOC)

Rotational speed rev/min	Control rod travel	Fuel delivery cm ³ /100 strokes 3	Difference cm³/ 100 strokes	Control rod travel mm 2	Fuel delivery cm ² /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1100	10,3+0,1	16,3-16,6	0,5(0,9)			
225	7,5-7,7	1,7-2,3	0,8(1,2)			
		·	-			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Checkin PRG che	(1)	Full-load s Setting po	oint	Test spec	cifications (4)	Idle spec Setting p	oint		cifications 5	TUTQ:## 0	control Control rod
rev/min	Control rod travel mm	rev/min 3	Control risi traval mm	Control red travel mm 5	rev/min 6	rev/min 7	Control rad travel mm 8		travel mm	rev/min 11	travel
550	15,6-16,4	550	16,0	9,3 4,0 1300	1145-1160 1185-1215 0-1,0		7,6	225	min. 9,1 7,5-7,7 105 = 2,0		10,3-10,4 10,3-10,5

Torque-control travel on flyweight assembly dimension a =

mm

1145-1160 min-1 Speed regulation: At 1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load of governor of Test oil ter	letivery on control lever 2	Control rod stop 3a	Fuel delive	ery characteristics 3b	Starting f	uel delivery d <u>(6</u>)
rev/min	cm ³ /-1000 strokes	rev/min 3	rev/min	cm ³ /-1000 strokes 5	rev/min	and travel and accordance of the Relation of t
1100	163,0-166,0 (160,0-169,0)	-	-	-	100	19,0-21,0

Checking values in brackets

7.83

BOSCH

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estoil-ISO 4113

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 IHC 9,4a

1. Edition

supersedes:

<u>En</u>

PES 8 P 100 A 921/5 RS 286 RQV 325-1250 PA 445 KR

1 - 8 - 4 - 2 - 7 - 3 - 6 - 5

Values only apply to test nozzle and holder assembly 1 688 901 017 and fuel-injection test tubing 9 681 230 713.

.

company: IHU DVT 573 B engine: Komb.-Nr.0 402 058 045

Suction-gallery pressure 2.8 bar All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

2,7-2,8
Port closing at prestroke (2,65-2,85) mm (from BDC)

Port Closing at pres		(2,05-2,05)	(110111 2007			
Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ² / 100 strokes 4	Control rod travel mm	Fuel dalivery cm ² /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1250	9,6-9,7	10,9-11,1	0,4			
325	5,0-5,1	1,7-2,3				
	ļ			1		

Adjust the fuel delivery from each cuties according to the values in

B. Governor Settings

Upper rated:	peed		Intermediate	rated sp	eed	Lower rated	speed	•	Sliding s	leeve travel
Degree of deflection of control lever	rev/min Control rod travel mm	Control rod travel mm rev/min 2a	Degree of deflection of control lever	r ev /min 5	Control rod travel mm 4	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 3	rev/min 10	mm 11
ca. 63	8,6 4,0 1640	1290-1300 1505-1535 0-1,0	-	•	-	ca.10	100 325 350-4	7,1-8,0 4,9-5,1 10=2,0	•	-

Torque control travel a =

mn

C. Settings for Fuel Injection Pump with Fitted Governor

	limitation	high idle s	ery charecteristics (5a)	idle	. •	Torque-control 5 travel	
	intermediate apoed					rev/min	Control rod travel mm
2		4 .	5	6	7	8	9
		LDA	0,8 bar	100	min. 170,0		9,6+0,1
		900	(113,0-121,0)	325	17,0-23,0	700	10,1+0, 9,8+0,
		LDA 800	0 bar 73,0-81,0 (71,0-83,0)				
2	0,8 bar 109,0-111,0	m³/1000 strokes rev/min 3	0,8 bar 1290-1300* LDA 900 (107,0-113,0)	0,8 bar 1290-1300* LDA 0,8 bar 115,0-121,0 (107,0-113,0) LDA 0 bar 800 73,0-81,0	m³/1000 strokes rev/min 3 rev/min cm³/1000 strokes rev/min 5 6 0,8 bar 1290-1300* LDA 900 115,0-121,0 (113,0-123,0) LDA 0 bar 800 73,0-81,0	m³/1000 strokes rev/min 3 rev/min cm³/1000 strokes rev/min cm³/1000 strokes 6 7 0,8 bar 1290-1300* LDA 0,8 bar 100 min. 170,0 115,0-121,0 (113,0-123,0) LDA 0 bar 800 73,0-81,0	m³/1000 strokes rev/min 3 rev/min cm³/1000 strokes rev/min cm³/1000 str

Checking values in brackets

* 1 mm less control rod travel than col. 2

5.83

-2-

D. Adjustment Test for Manifold Pressure Compensator

IHC 9,4a

Test at n =

800

rev/min decreasing pressure ~ in bar gauge pressure

Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure ≖ bar	Gauge pressure = bar	mm (I) .
PES 8 PRS 286 +RQVPA 445 KR	0,11-0,16	0,82-0,87	Start End

Notes:

(1) when n =

rev/min and gauge pressure =

Test Specifications Fuel Injection Pumps 2 and Governors

MAN 11,1 11 WPP 001/4 3. Edition

estoil-ISO 4113

supersedes 10.77 RQ 250/1100 PA335DR PES 6 P 110 A 720 LS295 company: M A N ..PA351DR

...LS345 RO 250/1100 PA335DR (3)
Komb.-Nr. O 402 046 152 (1) D 2566MT/MTUH engine:

0 402 046 150 (2)

0 402 046 752 (3)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

ખુત closing at prest	roke	3,00-3,10 (2,95-3,15)	mm (from BDd)	W=9,0 -	1	Contractor to a t
Rotational speed	Control rod travel	Fuel delivery cm ³ /100 strokes	Difference cm³/ 100 strokes	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1100	12,1+0	1 14,6 - 14,8	0,4(0,8)			
250	6,8-7,0	0,9 - 1,5	0,4(0,7)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

335DR und 351DR

PRĞ ched		Full-load s Setting po		Test spec Central red travel	ifications 4	Idle spec Setting p	oint Control rod travel	Test spec	cifications 5 Control rod travel		Control roa travel
rev/min		rev/min 3	mm 4	mm ·	rev/min 6	7	8	9	10	11	12
500	19,2-20,8	600	20,0	11,2	1145-1160	250	6,9	100	min. 8,5	1100	12,1-12,2
VH :	max. 46°	 	<u> </u>	4,0	1200-1230			250	6,8-7,0	1	12,3-12,5
			1	1300	0 - 1,0	7		370	410 =2,0	800	12,6-12,8
ļ		1		1				}		700	12,8-12,9
Torque	control travel		0,3		Sp.	eed regul	ation: Ai	1145	- 1160 m	in ⁻¹	1 mm less contro rod trave

Torque-control travel on flyweight assembly dimension a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de	ontrol lever (2)	Control rod stop 3	Fuel delive	rry characteristics 3b	Starting fuel delivery Idle speed Change - over point return rew/min cm²/1000 strokes/mm		
rev/min	p. 40°C (104°F) cm³/-1000 strokes	rev/min	rev/min	cm ³ /-1000 strokes 5	Change rev/min 6	cm ³ /1000 strokes / mm	
LDA 1100	0,7 bar 145,0 - 148,0 (142,5 - 150,5)		LDA 500	0,2 bar 123,0 - 127,0 (120,0 - 130,0)	100	215 - 235	
700	157,0 - 161,0 (154,0 - 164,0)		LDA 500	0 bar 110,0 - 113,0 (107,0 - 116,0)	100-	170 (80-190)	

Checking values in brackets

7.83

D. Adjustment Test for Manifold Pressure Compensator

rev/min decreasing pressure - in bar gauge pressure Test at n = ENN

Testoil-ISO 4113

500	increasing		MAN 11,1 1 1 -2-
Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure =	bar Gauge pressure =	bar mm (1) .
295 + 335 DR 351 DR	0,70		12,8 - 12,9
and		0,32	12,2 - 12,4
345 + 335 DR		0,20	11,5 - 11,6
		0	10,9 - 11,0
		1	

Notes

(1) when n =

rev/min and gauge pressure =

Test Specifications Fuel Injection Pumps (A) and Governors

WPP 001/4 KHD 20,2 a

1. Edition

En

PE 8 P 120 A 620/4 LS 325 RSUV 250-600 P 8 A 321 R 1-4-7-6-8-5-2-3 je 45° - 0,50 (- 0,75°)

Values only apply to test nozzle-and-holder assembly 1 688 901 019 and fuel-injection test tubing 1 680 750 067.

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

supersedes _

company KHD

engine BA 8 M 816

Komb.-Nr. 0 401 878 103

A. Fuel Injection Pump Settings

Port closing at prestroke

Testoil-ISO 4113

2,0-2,1 (1,95-2,15)

mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
600	14,9+0,1	28,7-29,1 (28,4-29,4)	0,5(0,9)			
250	6,0-6,2	1,6-2,3 (1,3-2,6)	0,8(1,2)		-	

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Degree of deflection of control lever	r rated speed Control rod travel mm		Interme	ediate rate	speed	Control- lever deflection in degrees	Lower rev/min 8	rated speed Control rod travel mm 9	I(3)	rque control Control rod travel mm 11
loose	775 X =	0,3-1,0 4,0	-	•	-	ca.25	250 250	5,6 6,0-6,2 20 = 2,0	600 220 350	14,9-15,0 16,2-16,8 14,9-15,0
ca.65	13,9 4,0 800	640-650 660-690 0,3-1,7					200-	20 - 2,0		

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

	ull-load stop	Rotational- speed limitat	3a Fu	el delivery aracteristics	Starting for	uel delivery 5	(19)	stop
rev/min	emp. 40°C (104°F) cm³/1000 strokes 2	changed to) rev/min 3	rev/min	cm ³ /1000 strokes 5	rev/min ඉ	cm³/1000 strakes 7		travel mm 9
Carry	nown. out adjustment gine.	640-650 *	-	-	100	19,5-21,0 mm RW	•	-
	:							

Checking values in brackets

* 1 mm less control rod travel than col. 2

6.83

BOSCH

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①

Test Specifications Fuel Injection Pumps 1001/4 6.Edition and Governors

En

PE 6 P 110 A 320 RS 367

RQV 250-1200 PA394/2R (1)

supersede80

Vol 7,0 e

RS 367Z

PA394/2R (2)

compan#01V0 engine:TD 70 F

RS 367Y

PA394/2R (3)

(1-174kW-237PS)

(2-155kW-210PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

(3-180kW-245PS)

A. Fuel Injection Pump Settings

(2.95-3.15)

mm (from BDC)

Rotational speed	Control rod travel mm	Fuel delivery cm³/100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring predensioning (torque-control valve) mm 6
700	11,9+0,	12, 1 - 12, 3	0,4(0,8)	10,9+0,1	10,0 - 10,2	2,5 [±] 0,1** (max.2,2-2,9)
250	4,7-4,8	1,1 - 1,5	0,3(0,6)	4,7-4,8	1,1 - 1,5	

Adjust the fuel delivery from each outlat according to the values in **In the case of greater dispersion after the delivery-valve spring pre-tension accordingly.

B. Governor Settings

(1)

Upper rated s	peed		Intermediate	rated sp	eed	Lower rated	sp ee d		Stiding sleeve travel	
deflection of control	Control rod travel	Control rod travel	Degree of deflection of control	rev/min	Control rod travel	Degree of deflection of control lever	rev/min	Control rod travel	rev/min	1 mm
lever 1	mm 2	rev/min (2a)	lever 4	5	6	7	8	9	10	11
ca. 68	1200 1500	15,2-17,8 0-1	-	٠	-	ca.12	250	min.6,3 4,7-4,9 170=2,0 0-1	200 1230	0,3-1,2 8,2
ca.68	10,9	1260-1270 1370-1400				3		0-1		

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load d Control-ro Test oil ter		limitation intermediate speed	high idle s	rery characteristics (Se)	Starting idle switchir	, •	Torque- travei	control 5 Control rod travel
rev/min	cm³/1000 strokes	rev/min 44	rev/min	cm ³ /1000 strokes	rev/min	cm³/1000 strokes	rev/min	mm
١,	2	3	4	5	6	7	8	9
(1) 700	LDA 0,7 bar 121,0-123,0 (118,0-126,0)	1260-1270*	LDA 700	0 bar 78,5-80,5 (75,5-83,5) Dis	100 250 persi	165 - 200 11-15 pn max.3)**		·

Checking values in brackets

* 1 mm less control rod travel than col. 2

Upper rated	speed		Intermediate	rated spe	ed .	Lower rated	speed		Sliding sl	eeve travel
Degree of deflection of control lever	Control rodtravel	Control rod travel mm rev/min 2a	deflection of control	rev/min	Control rod travel mm	Degree of deffection of control lever	rev/min	Control rod travel mm 3	rev/min	mm
1 :	22	3	4	5	6	'		9	10	···
max.	1200	15,2-17,8	-	-	-	ca.12	1	min.6,5 4,7-4,8	200 (,3-1,2
	ł					<u>.</u>			230	8,2
ca.67	9,9 4,0 1450	1265-1275 1360-1385 0 - 1,0				(3a)				

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load d Control-ro Test oil ter		Rotational-speed 2b timitation intermediate speed	Fuel deliv high idle s	very characteristics (5a)	Starting Idle switching	_	Torque- travel	control 5 Control rod
rev/min	cm³/1000 strokes	rev/min 48	rev/min	cm³/1000 strokes	rev/min	cm ³ /1000 strokes	rev/min 8	travel mm 9
700	LDA 0,7 bar 100,0-102,0 (97,0-105,0)	1265-1275*	LDA 700	0 bar 78,5-80,5 (75,5-83,5)	25 0	165, 200,0 = 20,0-21,0 mm RW 11- 15 ug. max. 3		-

Checking values in brackets

* 1 mm less control rod travel than col. 2

B. Governor Settings

367Y (3)

Upper rated s	speed			Intermediate	rated spe	ed	Lower rated	speed		Sliding sl	eeve travel
Degree of deflection of control lever	rod travel	Control rod travel mm rev/min	(a)	Degree of deflection of control lever	 	Control retravel	Degree of deflection of control lever	rev/min	Control travial	rev/min	mm (1)
1	2	3	<u>、</u>	4	5	6	 7	8	9	 10	11
ca.68	1200 1450	15,2-17 0-1	,8				ca.12		min. 4,7-		
ca.68		1240-12 1355-13					3 a				

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load d Control-ro Test oil ter		intermediate speed	Fuel deliv	pery characteristics (5a)	Starting Idle switchir	\sim	travel	Control rod
rev/min	cm ³ /1000 strokes	rev/min (4a)	rev/min	cm ³ /1000 strokes	rev/min		rev/min	mm
1	2	3	4	5	6	7	8	9
1.0A 700	0,7 129,0-131,0 (126,0-134,0)	1240-1250*	LDA 700	0 bar 78,5 - 80,5 (75,5 - 83,5)	100 250 isper	165,0-200,0 11-15** sion max. 3		

Checking values in brackets

* 1 mm less control rod travel than col. 2

D. Adjustment Test for Manifold Pressure Compensator

VOL 7,0 e

	decreasing		AOT A'O 6
Testatn = 500	rev/min decreasing pressure increasing XXXXXXX	e – in bar gauge pressure	
Pump/governor	Setting Gauge pressure =	Measurement bar Gauge pressure =	Control rockletic diminution Control rockletic XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
367 + 394/2R	0,48	0,27	11,5 - 11,6 10,3 - 10,5
367Z + 394/2	R 0,36	0,23	10,6 - 10,7 9,9 - 10,1
367Y + 394/2	R 0,53	o"26	11,8 - 11,9 10,3 - 10,5

(1) when n =

rev/min and gauge pressure =

Festoil-ISO 4113

Test Specifications Fuel Injection Pumps 2 and Governors

WPP 001/4 STE 10,0b

6. Edition

PE 6 P 110 A 721 RS 369

RQ 300/1300 PA 412 DR RQV250-1300 PA 413 DR

1.82 supersedes

Steyr company: WD 615.60

engine:

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Bunn Settings

Port closing at prestroke

2,80-2,90

mm (from BDC)

Rotational speed	Control rod travel	Fuel delivery	Difference cm ³ /	Control rod travel	Fuel delivery	Spring pre-tension-ng (torque-control valve)
rev/min 1	mm 2	cm ³ /100 strokes 3	100 strokes	mm 2	cm ³ /100 strokes 3	6
1300	12,5+0,	11,7 - 11,9	0,4(0,75			
250	9,0-9,2	1,8 - 2,4	0,4(0,7)			

Adjust the fuel delivery from each outlet according to the values in

RO 412 DR

B. Governor Settings

Checking of slider PRG check Control rod travel ev/min rom 2	Full-load s Setting po rev/min 3			Idle spec Setting p rev/min 7	coint Control red travel	Test spe	cifications (5) Control rod travel mm	Torque c rev/min 11	Control rod travel
550 15,6-16,4	550	16,0	11,5 4,0 1550		6,0	100 300 390-	min. 7,4 5,9-6,1 430 =2,0	700	12,5-12,6 12,8-12,9 12,6-12,8 12,6-12,7

Torque-control travel
on flyweight assembly dimension a =

0,2 _{mm}

Speed regulation: At

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load degovernor C	elivery on ontrol lever np. 40°C (104°F)	Control rod stop	Fuel delive	ery characteristics 3b	Starting for	d Centre
rev/min	cm ² /-1000 strokes 2	rev/min 3	rev/min	cm³/-1000 strokes 5	rev/min 6	red travel cm ³ /1:000 strokes / mm 7
LDA 1300	0,7 bar 117,0 - 119,0 (114,0 - 122,0)		LDA 700 LDA 700	0,7 bar 107,0 - 111,0 (104,0 - 114,0) 0 bar 100,0 - 102,0 (97,0 - 105,0)	100	115,0 - 135,0

Checking values in brackets

7.83

BOSCH

B. Governor Settings

Upper rated	speed	<u> </u>		Intermediate	rated spe	ed	Lower rated	speed I		Sliding sl	eeve travel
Degree of deflection of control lever	rev/min	Control rod travel mm rev/min	(a)	Degree of deflection of control lever	rev/miñ	Control rod travel mm 4	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 3	rev/min 10	(1) mm 11 +0,1
ca.50	1300 1550	15,2-17 0-1	,8	-	-	-	ca.15	100 250 420-	min.10,5 9,3-9,5 480 =2,0	1300	`
ca.47	11,6	1340-13 1450-14		·			(3a)	500	0-1	700	13,0

Torque control travel a = 0,4 mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-roo Test oil ten	1 stop	Rotational-speed (20) limitation intermediate speed (4a)	high idle s	istics Sb	Idle switchir	ng point	travel	Control cod travel
rev/min	cm ³ /1000 strokes	rev/min 3	rev/min 4	cm ³ /1000 strokes 5	6 rev/min	cm ² /1000 strokes 7	rev/min	9
LDA 1300	0,7 bar 115,0-117,0 (112,0-120,0)	1340-1350*	LDA 700	0,7 bar 108,0-111,0 (105,0-114,0)	100	120 - 130		
			LDA 700	0 bar 102,0-104,0 (99,0-107,0)		-170 (80-190)		

Checking values in brackets

* 1 mm less control rod travel than col. 2

D. Adjustment Test for Manifold Pressure Compensator

Test at n =

rev/min decreasing pressure - in bar gauge pressure increasing

Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure = bar	Gauge pressure = bar	mm
369 + 412 DR	0 ,7 0	0 0,31 0,27	12,8 - 12,9 12,5 - 12,6 12,7 - 12,8 12,6 - 12,7
369 + 413 DR	0,7	0,35 0,33 0	13,0 - 13,1 12,9 - 13,0 12,7 - 12,8 12,8 - 12,9

En

To the

Test Specifications Fuel Injection Pumps 2 and Governors

40

WPP 001/4 MAN 11,1 r 3 2. Edition

En

PES 6 P 120 A 720 LS 388

RQ 250/1050 PA 452

supersedes9.82 company: MAN

Komb.-Nr. 0 402 046 244

Values only apply to test nozzle-and-holder assembly 1 688 901 019 and fuel-injection test tubing 1 680 750 067.

engine: D 2566 MKF 235 kW

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

(2,95-3,15)

mm (from BDQ)y1.6; RW = 9.0-12.0 mm

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm³/ 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
750	13,1+0,1	21,7-22,0	0,5 (0,9			
250	6,3-6,5	1,1-1,7	0,8 (1,2)			
			1			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

on flyweight assembly dimension a

Checkin PRG che	ig of slider	Full-load : Setting po	•	•	cifications (4)	Idle spec	•		cifications (5)	Torque	control 3
rev/min	Control rod travel mm	rev/min	Control red travel rnm 4	Central red travel mm	rev/min	rev/min 7	Control red travel rnm 8	rev/min 9	Control rod travel mm	rev/min	Control rod travel
600 VH =	19,2-20,8 max. 46°	600	20,0		1175-1205		6,4	250	min. 7,9 6,3-6,5 80 = 2,0	1100 750 890 960	11,3-11,4 13,1-13,2 12,7-12,9 11,7-12,0
Torque-c	control travel	!	0,7	L	L			1099	5-1110 min	-1	1 mm less contro

Speed regulation: At

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de governor c Test oil terr	elivery on ontrol lever pp. 40°C (104°F)	Control rod stop	Fuel delive	ery characteristics (3b)	Starting fuel delivery Idle speed Contra		
rev/min	cm³/-1000 strokes	rev/min 3	rev/min	cm ³ /-1000 strokes	rev/min 6	cm ³ /1000 strokes / mm	
LDA 750 LDA 1050	1,0 bar 217,0-220,0 (214,0-223,0) 1,0 bar 180,0-186,0 (177,0-189,0)	-	LDA 500 LDA 500	0,34 bar 144,0-150,0 (141,0-153,0) 0 bar 101,0-104,0 (98,0-107,0)	100	205,0-225,0 (201,0-229,0)	

Checking values in brackets

7.83

rod travel

BOSCH

Geschäftsbereich KH, Kundendienet, Kfz-Ausrüstung.

O 1980 by Robert Bosch GmbH. Postfach 50, D-7000 Stuttgart 1. Printed in the Federal Republic of Germany. Imprivée en République Fédérale d'Allemagne par Robert Bosch GmbH.

D. Adjustment Test for Manifold Pressure Compensator

Test at n ≈

500

rev/min decreasing pressure - in bar gauge pressure

MAN 11,1 r 3

Testoil-ISO 4113

Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1) .
PES 6 PLS 388		1,0	13,1 - 13,2
with RQ. PA 452		0	9,4 - 9,5
	0,34		10,5 - 10,6
		0,61	12,1 - 12,4

Notes

(1) when n =

rev/min and gauge pressure =

Test Specifications Fuel Injection Pumps ② and Governors

WPP 001/4 MAN 11,197 2. Edition

Testoil-ISO 4113

RQ250/1100 PA 509 (%) PES 6 P120 A 720 LS 388 ROV250-1100 PA 504 (2) supersades 3.80

company: MAN

D 2566 MK

206 Kw (280 Ps)

Komb.-Nrn. 0 402 046 208 (1)

0 402 046 209 (1)

0 402 046 204 (2)

0 402 046 205 (2)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings (2,95-3,15)
Port closing at prestroke 3,00-3,10

mm (from BDC) Zv1. 6

or coming at private		,00-3,10		372.		
Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm³/ 100 strokes: 4	Contro! rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	pring pre-tensioning (torque-control valve) mm 6
750	11,4-11	5 17,7 - 18,1	0,5(0,9)			
250	6,2-6,	1,2 - 1,8	0,8(1,2)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

RQ - 509

Checking PRG che	g of slider ck Control red I travel	\odot	Full-load s Setting po			cifications	4	idle spec		Test spe	cifications 5 Control rod		Control rod (3)
rev/min			rev/min	mm	mm	rev/min		rev/min	١٥	rev/min	mm 10	rev/min	mm 12
1	2		3	-	3	0			16	-			
600	19,2-20	.8	600	20,1	9,2	1145-	1160	250	6,3	100	min.7,8	1100	10,2-10,3
1100		<u> </u>		-	4,0	1180-	1210	1		250	6,2-6,4	975	10,4-10,6
1400	_ ر	1.0	VH ca	490		1		ļ	1			875	11,0-11,1
1400	1	,,,] "" "	1		1				350	390 = 2,0	1	İ
}	١			į				ĺ	l	i		750	11,4-11,5
	Breaka	мау				1							<u> </u>

Torque-control travel on flyweight assembly dimension a = 0,45

Speed regulation: At

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery on governor control lever Test oil temp. 40°C (104°F)		Control rod stop 33	Fuel deliv	ery characteristics 3b	Starting fuel delivery Idle speed		
rev/min	cm ³ /-1000 strokes	rev/min 3	rev/min 4	cm³/-1000 strokes 5	rev/min 6	nd tard cm³/1000 strokes:/ mm 7	
LDA 750 LDA 1100	0,7 bar 177,0 - 181,0 (174,0 - 184,0) 0,7 bar 166,0 - 172,0 (162,5 - 175,5)		LDA 650 LDA 500 LDA 500	0,7 bar 171,0 - 177,0 0,31 bar 134,0 - 140,0 0 bar 102,0 - 1060	100 250 100-	215,0-235,0 12,0- 18,0 170 (80-190)	

Checking values in brackets

(increase by $4-5 \pm 3$ cm³

7.83

①

Upper rated s	speed		Intermedia	te rated spe	ed	Lower rated	speed	1	Sliding sl	eeve travel
Degree of deflection of control lever	rev/min Control rod travel mm	travel (Degree of deflection of control lever	rev/min	Control rod travel mm 4	Degree of deflection of control lever	rev/min	Control rod travel mm 3	rev/min 10	① mm 11
max.	1100	15,2-17,	8			ca. 15	100	min.7,8	250	1,2
							250	6,2-6,4	500	4,0-4,3
ca.66	9,2	1140-1150					395-	455= 2,0	1150	8,4
	4,0	1220-1250)				V			
	1400	0 - 1,0				39	<u> </u>	<u></u>		<u> </u>

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-rod Test oil tem	-	Rotational-speed (2b) timitation intermediate speed	character high idle	istics	Starting Idle switchir		Torque- travel	Control S Control rod travel
rev/min	cm ³ /1000 strokes 2	rev/min 4a) 3	rev/min 4	cm³/1000 strokes 5	sev/min	cm 1/1000 strokes 7	rev/min 8	mm 9
LDA 750 LDA 1100	0,7 bar 177,0 - 181,0 (174,0 - 184,0 0,7 bar 166,0 - 172,0 (162,5 - 175,5	1140-1150*	LDA 650 LDA 500 LDA 500	0,7 bar 171,0 - 177,0 0,31 bar 134,0 - 140,0 0 bar 102,0 - 106,0	100 250 100-1	215,0-235,0 12,0- 18,0 70 (80-190)		11,4-1 10,4-1 11,0-1 11,4-1

Checking values in brackets (increase by 4-5 + 3 cm3

* 1 mm less control rod travel than col. 2

D. Adjustment Test for Manifold Pressure Compensator

Testatn =

rev/min increasing pressure - in bar gauge pressure

Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure = bar	Gauge pressure = bar	mm
388 + 509	0,7	0,43 0,31 0	11,4 - 11,5 10,9 - 11,1 10,3 - 10,4 9,2 - 9,3
388 + 504	0,7	0,43 0,31 0	11,4 - 11,5 10,9 - 11,1 10,3 - 10,4 9,2 - 9,3

Test Specifications Fuel Injection Pumps 2 and Governors

WPP 001/4 MAN 11,1 q 11

1. Edition

PES 6 P 120 A 720 LS 388 RQ 250/1100 PA 658-6_

Komb.-Nr. 0 402 046 260, G 402 046 261

Values only apply to test nozzle-and-holder assembly 1 688 901 019 and fuel-injection test tubing 1 680 750 067.

supersedes _

company: MAN

D 2566 MKF engine:

235 kW (320 PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

6,3-6,

		3,0±3,1 (2,95-3,15)	mm (from BDC)	Zyl. 6;	RW = 9,0-12	
Port closing at prest	T .	(2,95-5,10)		Control rod	Fuel delivery	Spring pre-tensioning (torque-control valve) -
Rotational speed	travel	cm ³ /100 strokes	cm ³ / 100 strokes	mm	cm ³ /100 strokes	mm 6
750	13,1+0	21,7-22,0	0,5(0,9)			

0,8(1,2)

Adjust the fuel delivery from each outlet according to the values in

1,1-1,7

B. Governor Settings

PRĞ ched	Control rod	Full-load s Setting po		Test spec		coint Control red travel	Test spe	cifications 5 Control rod	rev/min	Control rod travel
rev/min 1 600 VH	2	600	20,	10,3 4,0 1400	1145-1160 1185-1215 0 - 1,0	6,4	100 250 350-	min.7,9 6,3-6,5 390=2,0	750 900	11,3-11,4 13,1-13,2 12,6-12,7 11,8-12,0
							1145-1	1160 min ⁻¹		1 mm less cont

Torque-control travel on flyweight assembly dimension a =

Speed regulation: At

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de	hivery on 2	Control rod stop 33	ويخلمان ويرج	ery characteristics 3b	idle spee	(30 gase)
rest oil tem rev/min	p. 40°C (104°F) cm³/-1000 strokes	rev/min	rev/min	cm³/-1000 strokes 5	rev/min 6	cm ³ /1000 strokes / mm 7
LDA 750	1,0 bar 217,0-220,0 (214,0-223,0	-	LDA 650	1,0 bar 208,0-213,0 (205,0-216,0)	100	205,0-225,0
LDA 1100	1.0 bar		LDA 500 LDA 500	0,34 bar 145,0-150,0 (142,0-153,0) 101,0-104,0		

Checking values in brackets

(98,0-107,0)

6,83

3

Testoil-ISO 4113

250

D. Adjustment Test for Manifold Pressure Compensator

MAN 11,1 q 11 -2-

Test at n =

500

rev/min decreasing pressure – in bar gauge pressure

545			
Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1) .
PES 6 P LS388 +RQPA658-6	1,0	0 0,34 0,61	13,1-13,2 9,4-9,5 10,9-11,0 12,5-12,9
·			

Notes

(1) wh/,n n =

rev/min and gauge pressure =

Test Specifications Fuel Injection Pumps 2 and Governors

40

WPP 001/4 MAN 11,1 q 16

1. Edition

<u>En</u>

PES 6 P 120 A 720 LS 388

RQ 250/1100 PA 658-7

Komb.-Nr. 0 402 046 263, 0 402 046 262

supersede MAN

company: D 2566 MK

engine: 206 kW (280 PS)

Values only apply to test nozzle-and-holder assembly 1 688 901 019 and fuel-injection test tubing 1 680 750 067.

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

3,U-3,1 (2,95-3,15) mm (from BDC7 y1. 6

		2,33-3,237				
Rotational speed rev/min	Control rod travel	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
750	11,4+0,	17,7-18,0	0,5(0,9)			
250	6,2-6,	1,2-1,8	0,8(1,2)			
	1					

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Checking		Full-load s	•	•	cifications (4)	Idle spec	•		cifications (5)	Torque o	control (3)
rev/min	Control rod travel mm 2	rev/min 3	Control red travel mm	Central red travel mm -	rev/min	rev/min 7	Centrel red travel mm 8	rev/min 9	Control rod travel mm	rev/min	Control red travel
600 VH=I	19,2-20,8 nax.46°	600	20,0		1145-1160 1180-1210 0-1,0	250	6,3	250	min.7,8 6,2-6,4 390=2,0	750 875	10,2-10,3 11,4-11,5 11,0-11,1 10,4-10,6
	antal Arrusi	L		L	<u> </u>	L	1	145-1	60 min	<u> </u>	1 mm less contro

Torque-control travel on flyweight assembly dimension a =

0,45 mm

Speed regulation: At

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de governor c Test oil terr		Control rod stop (3a)	Fuel deliv	ery characteristics 3b	Starting fuel delivery Idle speed			
rev/min 1	cm ³ /-1000 strokes 2	rev/min 3	rev/min 4	cm ³ /-1000 strokes 5	rev/min	ad tradi cm ³ /1000 strokes:/ mm 7		
LDA 750 LDA 1100	0,7 bar 177,0-180,0 (174,0-183,0) 0,7 bar 160,0-165,0 (157,0-168,0)	-	LDA 500 LDA 500	0,31 bar 131,0-136,0 (128,0-139,0) 0 bar 103,0-106,0 (100,0-109,0)	100	205,0-225,0		

Checking values in brackets

-2-

D. Adjustment Test for Manifold Pressure Compensator

Test at n =

500

rev/min decreasing pressure - in bar gauge pressure

MAN 11,1 q 16

300			
Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1) .
PES 6 PLS 388 +RQPA 658-7	0,31	0,70 0 0,43	10,3-10,4 11,4-11,5 9,2-9,3 10,9-11,1
•			

Notes

(1) when n =

rev/min and gauge pressure =

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 MAN 11,1 q 15

1. Edition

_

PES 6 P 120 A 720 LS 388

RQV 250-1050 PA 671-2

supersedes

company MAN

engine: D 2566 MK/319

235 kW

Komb.-Nr. 0 402 046 278

Values only apply to test nozzle-and-holder assembly 1 688 901 019 and fuel-injection test

tubing 1 680 750 067.
All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at pres	troke	3,0-3,1	mm (from BDC)	Zyl. 6; F	W=9,0-12,0 mm	
Rotational speed	Control rod	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min 1	mm 2	cm ³ /100 strokes 3	cm³/ 100 strokes 4	mm 2	cm³/100 strokes 3	mm 6
750	13,1+0,	1 21,7-22,0	0,5(0,9)			1
250	6,3-6,	5 1,1-1,7	0,8(1,2)			
						<u> </u>

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated s			Intermediate	rated sp	A	Lower rated	speed	Control rod	Sliding s	teeve travel
deflection of control	Control rod travel	Oontrol rod travel mm rev/min 2a	Degree of deflection of control lever	rev/min 5	Control rod travel mm 4	Degree of deflection of control lever	rev/min 8	travel	rev/min	mm 11
max.	1140	15,2-17,8	-	-	-	ca. 11	100 250	min.7,9 6,3-6,5	300 850	1,5-1,8 5,8-6,0
ca. 61	10,3 4,0 1300	1090-1100 1180-1210 0-1,0					385-	445=2,0	1050	7,6
						39				

Torque control travel a = 1,8 mm

C. Settings for Fuel Injection Pump with Fitted Governor

Control-roo	ontrol-rod stop est oil temp. 40°C (104°F) 2 limitation intermediate speed		high idle s	cm³/1000 strokes	Starting Idle switchir rev/min		Torque- travel rev/min 8	Control (5) Control rod travel mm
LDA 750 LDA 1050	1,0 bar 217,0-220,0 (214,0-223,0 1,0 bar 180,0-185,0 (177,0-188,0		LDA 500 LDA 500	0,34 bar 145,0-150,0 (142,0-153,0 0 bar 101,0-104,0 (98,0-107,0	100	205,0-225,0 (201,0-229,0	1050 850	13,1+0,1 11,3+0,1 12,6+0,2 11,7+0,3

Checking values in brackets

* 1 mm less control rod travel than col. 2

-2-

D. Adjustment Test for Manifold Pressure Compensator

Test at n =

500

decreasing pressure - in bar gauge pressure increasing

MAN 11,1 q 15

300			
Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1) .
PES 6 PLS 388 +RQVPA 671-2	1,0	0 0,34 0,61	13,1-13,2 9,4-9,5 10,9-11,0 12,5-12,9

Notes.

(1) when n =

rev/min and gauge pressure =

Testoil-ISO 4113

1. Edition

PES 6 P 120 A 720 LS 388

RQV 250-1100 PA 671-1

supersedes. company:MAN

Komb.-Nr. 0 402 046 277

engine: D 2556 MK 235 kW

Values only apply to test nozzle-and-holder assembly 1 688 901 019 and fuel-injection test

tubing 1 680 750 067.
All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers.

A. Fuel Injection Pump Settings 3,0-3,1
Port closing at prestroke (2,95-3,15)

3,0-3,1 prestroke /2,05_3,15; mm (from 8DC) Zy1. 6; RW=9,0-12,0 mm

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm³/ 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
750	13,1+0,	1 21,7-22,0	0,5(0,9)			
250	6,3-6,	5 1,1-1,7	0,8(1,2)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated s	peed			Intermediate	rated sp	ed		Lower	rated	speed			Sliding s	leeve travel
	rev/min Control rod travel mm	Control rod travel mm rev/min	(9) (28)	Degree of deflection of control lever	rev/min	Control travel mm 6	rod ①	Degree deflect of con- lever 7	tion	rev/min	Control retravel	•d . ③	rev/min	mm
max. ca. 64	1140 10,3 4,0 1350	15,2-17 1140-11 1220-12 0-1,	150 250	-	-	-	•	ca.	11		min.7 6,3-6 145=2,	,5		1,5-1,8 5,8-6,0 8,1

Torque control travel a = 1,8 mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load d Control-co Test oil ter	d stop	Rotational-speed 20 limitation intermediate speed	Fuel delin	rery characteristics 58 poed 50	Starting idie switchir	. •	Torque- travel	Control rod
rev/min	cm³/1009 strokes	rev/min 40	ten/wiu	cm²/1000 strokes	rev/min	cm³/1000 strokes	rev/min	
1	2	3	4	5	6	7	8	•
LDA 750 LDA 1100	1,0 bar 217,0-220,0 (214,0-223,0) 1,0 bar 180,0-185,0 (177,0-188,0		LDA 500 LDA 500	0,34 bar 145,0-150,0 (142,0-153,0 0 bar 101,0-104,0 (98,0-107,0		205,0-225,0 (201,0-229,0	1100 860	13,1+0, 11,3+0, 12,6+0, 11,7+0,

Checking values in brackets

* 1 mm less control rod travel than col. 2

-2-

D. Adjustment Test for Manifold Pressure Compensator

MAN 11,1 q 14

Testate =

500

rey/min decreasing pressure - in bar gauge pressure increasing

Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure = bar	Gauge pressure * bar	mm (1) .
PES 6 PLS 388 +RQVPA 671-1	1,0	0 0,34 0,61	13,1-13,2 9,4-9,5 10,9-11,0 12,5-12,9

Notes:

(1) when n =

rev/min and gauge pressure =

Test Specifications 0 Fuel Injection Pumps 1 and Governors

WPP 001/4 RVI 8,8 c 2. Edition

PE 6 P 120 A 321 RS 359

ROV 275-1200 PA 538

supersedes 4 .81 company: RVI

Komb.-Nr. 0 401 856 148

Values only apply to test nozzle-and-holder assembly 1 688 901 019 and fuel-injection test

MID 06.20.30

Testoil-ISO 4113

tubing 1 680 750 067.

140 kW

As test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

mm (from BDC)

bou crossed at blas	uoko ()	3.45-3.651				
Rotational speed	Control rod travel mm	Fuel delivery cm ³ /100 strokes	Difference cm³/ 100 strokes	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1200	9,5-9,6	13,0-13,2	0,5(0,9)			
275	4,6-4,8	1,3-1,9	0,8(1,2)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

deflection	peed rev/min Control rod travel mm	Control rod ta	Intermediate Degree of deflection of control lever	rated sports of the sports of	Control rod travel	Lower rated Degree of deflection of control lever 7	speed rev/min 8	Control rod travel mm 3	Sliding st rev/min 10	mm
māx.	1280	15,2-17,8	-	-		ca. 9		min. 6,2 4,6-4,8	275 950	1,1-1,3 5,6-5,8
ca. 63	8,5 4,0 1450	1240-1250 1300-1330 0-1,0	,					, , o - 4, o	1200	7,6-7,8
						3				

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F) (2)		Rotational-speed 2b limitation intermediate speed			Starting Idle switchir	. •	Torque-control (travel Control	
rev/min	cm³/1000 strokes	rev/min 49	rev/min	cm ³ /1000 strokes 5	rev/min	cm²/1000 strokes 7	røv/min 8_	travel mm
1200	130,0-132,0 (127,0-135,0)	1240-1250*	-		100	190,0-210,0	•	•

Checking values in brackets

* 1 mm less control rod travel than col. 2

7.83

BOSCH

Test Specifications Fuel Injection Pumps (A) and Governors

40

WPP 001/4 DAF 11,6k3 2. Edition

PE 6 P 110 A 320 RS 372-1 RSV 250-1100 P5/458 R P5/458-1

11.82 supersedes: DAF company

engine

DKTD 1160 191 kW (260 PS)

See Service Information VDT-I-DAF 004.

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

2,8-2,9 Port closing at prestroke (2.75-2.95)

mm (from BDC)

Rotational	Control rod	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm 2	cm ¹ /100 strokes 3	cm ³ / 100 strokes 4	mrn 2	cm#100 strokes 3	mm 6
850	11,9+0,1	13,5 - 13,7	0,4 (0,8)			
250	6,6-6,8	0,7 - 1,1	0,4 (0,7)			
	-					

Adjust the fuel delivery from each outlet according to the values in $oldsymbol{\mathsf{C}}$

B. Governor Settings

Testoil-ISO 4113

	travel	rev/min Control rod travel mm rev/min	Interme:	diate rated	speed	Control- lever deflection in degrees 7	Lower rev/min B	rated speed Control rod trave/ mm	(3) To	Control Control rod travel mm
loose ; ca. 51	800 x = 10,9 4,0 1425	0,3-1,0 4,25 1140-115 1275-130 0,3 - 1,		-	-	ca. 21	250 250 640-700	6,2 6,5-6,8 = 2,0	400 300	12,1+0,1 12,3+0,5

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

(2b) Fu	H-load stop	6 Rotational-		el delivery aracteristics	Starting f	uel delivery 5	(4a) Idle	e stop
	cm ³ /1000 strokes	speed limitat. Note: changed to) rev/min 3	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes 7	}	Control rod travel mm
LDA 850	0,7 bar 134,5-136,5 132,0-139,0)	1140-1150*	LDA 600	bar 125,0-128,0 (122,0-131,0)	100	245,0-285 = 19,5-21 mm RW	0 250 0	6,6-6,8

Checking values in brackets

* 1 mm less control rod travel than col. 2

7.83

D. Adjustment Test for Manifold Pressure Compensator

DAF 11,6 k 3 - 2 -

Test atn =

600

rev/min decreasing pressure – in bar gauge pressure

Pump/governor	Setting	Measurement	diminution Control rod travet- difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1) .
PE 6 PRS 372-1 + P5/458 uP5/458-1	0,30	0,70 0 0,26	11,8-11,9 11,9-12,0 11,3-11,4 11,5-11,7

Notes:

(1) when n =

rev/min and gauge pressure =

Test Specifications Fuel Injection Pumps (A) and Governors

40

WPP 001/4 DAF 11,6 k 2 2. Edition

En

PE 6 P 120 A 320 RS 372-1 Y

RSV 250-1100 P5/458 R

supersede 9.82 company DAF

See Service Information VDT-I-DAF 004

Values only apply to test nozzle-and holder assembly 1 688 901 019 and fuel-injection test tubing 1 680 750 067.

DKX 1 160 243 kW

Komb.-Nr. 0 401 876 261

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

Testoil-ISO 4113

2,8-2,9 (2,75-2,95)

mm (from BDC)

Rotational speed	Control rod	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pro-tensioning (torque-control valve)
revi/min	mm (2)	cm³/100 strokes	cm ³ / 100 strokes	mm	cm ³ /100 strokes	mm
1	2	3	4	2	3	6
850	11,4+0,1	18,3-18,6	0,5 (0,9)			_
250	6,4-6,6	1,1-1,5	0,8 (1,2)			
		1				

Adjust the fuel delivery from each cutlet according to the values in

B. Governor Settings

	r rated speed Control lod	Control rod	Intermed	diate rated	speed	Control-	Lower	rated speed Control rod travel	(3)	rque control Control rod travel
deflection of control lever	travel mm 2	travel mm rev/min 3	4	5	 6	tever deflection in degrees 7	rev/min 8	mm 9	rev/min 10	mm 11
loose	800	0,3-1,0	-	-	-	ca. 24	250	6,0	400 300	11,6-11,7 11,8-12,3
10036	X =	: 5,0					250 620-68	6,4-6,6 = 2,0	300	11,0-12,5
ca. 54	10,4 4,0 1425	1140-1150 1270-1300 0,3-1,7					020-00			

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

(4)	H+cad stop	6 Rotational- speed limitat		net delivery paracteristics	Starting f	uel delivery 5	(4a) Idl	stop
Test oil te rev/min 1	emp. 40°C (104°F) cm³/1000 strokes 2	Note: changed to) rev/min 3	rev/min 4	cm ³ /1900 strokes 5	rev/min 6	cm³/1000 strokes 7	rev/min 8	travel mm 9
LDA 850	0,7 bar 183,0-186,0 (180,0-189,0)	1140-1150*	LDA 600	0 bar 135,0-138,0 (132,0-1€1,0)	100	315,0- 355,0 (311,0- 359,0) = 19,5- 21,0 mm R	250	6,5

Checking values in brackets

* 1 mm less control rod travel than col. 2

7.83

BOSCH

Geschäftsbereich KH. Kundendienst Kfz-Ausrüstung.
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D. Adjustment Test for Manifold Pressure Compensator

DAF 11,6 k 2

- 2 -

Test at n =

600

rev/min decreasing pressure - in bar gauge pressure

Pump/gavernor	Setting Gauge pressure # bar	Measurement Gauge pressure = bar	diminution Control rod travel- difference mm (1)
PE 6 PRS 372-1y +P5/458 R	0,37	0,70 0 0,30	11,0-11,1 11,4-11,5 10,0-10,1 10,3-10,7
	•		: · - I

Notes:

(1) when n =

rev/min and gauge pressure *

Test Specifications Fuel Injection Pumps (A and Governors

WPP 001/4 VOL 7,0 h 4. Edition

PE 6 P 110 A 320 RS 390 Komb.-Nr. 0 401 876 249 RSV 650-750 P 4/421

RSV 200 - 750 P 4/421

supersede 11.82 Volvo TD 70 GG

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

(2.95-3.15)Port closing at prestroke 3,00-3,10

estoil-ISO 4113

mm (from BDC)

Rotational	Control rod	Fuel delivery	Difference	Control rod	Fuel delivery	Spring pre-tensioning (torque-control valve)	
speed rev/min	mm 2	cm ³ /100 strokes 3	cm³/ 100 strokes 4	mm 2	cm ³ /100 strokes 3	mm 6	
700	10,7+0,1	10,2 - 10,4	0,4(0,8)			2,5+0,1**	
300	5,4-5,6	1,9- 2, 9	0,3(0,6)			(max.2,2-2,9)	

Adjust the fuel delivery from each outlet according to the values in alter the delivery-valve spring pre-tension **In the case of greater dispersion alter the delivery-valve spring pre-tension

B. Governor Settings

11 1 1	r rated speed Control rod travel mm		Interm	ediate rated	d speed	Control- lever deflection in degrees 7	Lowe rev/min 8	rated speed Control rod travel mm	(3) To	rque control Control rod travel mm 11
loose	800 x =	0,3-1,0 4,0				ca.18	300	5,5		
ca.37	750-75 775-78 1000=0	5=4,0								

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2b) Full-load stop Test oil temp. 40°C (104°F)		Rotational- speed limitat	(3a) Fuel delivery characteristics		Starting fuel delivery 5		Idle stop	
rev/min	cm ³ /1000 strokes 2	changed to) rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	travel mm 9
700	102,0 - 104,0 (97,0 - 105,0)	750-755*						

Checking values in brackets

* 1 mm less control rad travel than col. 2

estoil-ISO 4113

Test Specifications Fuel Injection Pumps 1 WPP 001/4 STE 10,0a and Governors 2. Edition

ROV 250-1300 PA480R (1) RQ 300/1300 PA481R (2) supersedes1.80 company Steyr

Komb.-Nrn. 0 401 856 145 (1) 0 401 856 144 (2)

WD 615.00

ROV...480R

PE 6 P 100 A 721 RS398

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings 3.50-3.60

Port closing at pres Rotational speed	Control rod travel	45-3,65) Fuel delivery	mm (from BDC) Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque control valve)
rav/min 1	mm 2	cm ³ /100 strokes 3	cm³/ 100 strokes 4	mm 2	cm³// © strokes 3	mm 6
1300	11,3-11	,4 9,3-9,5	0,35(0,6)	11,3-11	4 9,3-9,5	n 1300
250	9,0-9,2	1,8 - 2,2	0,35(0,5	8,5-8,	1,2 - 1,8	300

Adjust the fuel delivery from each outlet according to the values in [

B. Governor Settings

Upper rated s	peed		ı	Intermediate	rated sp	eed	Lower rated	speed		Sliding s	leeve travel
Degree of deflection	rev/min Control rod trave mm	Control rod travel mm rev/min 3	0	Degree of deflection of control lever	rev/min 5	Control rod travel mm 4	Degree of deflection of control lever	rev/min 8	Control rod travel mm 3	rev/min 10	mm 11
max.	1300	15,2-17	, 8	-	-	-	ca.14	100 250	min.10,5 9,0-9,2		0,8-1,0 4,4-4,7
ca. 47	10,3 4,0 1550	1405-1		}			415-47	5	·	134 0	8,8

Torque control travel a = 0,4

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load d Control-ro Test oil ter	d stop np. 40°C (104°F) 2	limitation intermediate speed	high idle s	very characteristics (5a)	switchir	. •	Torque- travel	Control (5) Control rod travel mm
1	2	3	4	5	6	7	8	9
1300	93,0 - 95,0 (91,0 - 97,0)	1340-1350*	600	77,0 - 80,0 (74,5 - 82,5)	100	100,0-120,0	1050	11,3-11 11,4-11 11,6-11

Checking values in brackets

* 1 mm less control rod travel than col. 2

G1

PRG chec	Control rod travel	Full-load s Setting po rev/min 3			rev/min	Idle spec Setting p rev/min 7	Control red travel	Test spe	cifications 5 Control rod travel mm	rev/min	Control rod travel
600	15,5-16,5	600	16,0	10,3	1345-1355	300	6,0	100	min. 7,5	1300	11,3-11,4
				4,0	1400-1430			300	5,9-6,1	1030	11,3-11,6
1300 1 550	Breakaway 0 - 1							395-4	35 =2,0	600	11,7-11,8

Torque-control travel on flyweight assembly dimension a

mm

Speed regulation At

mm less control rod travel

C. Settings for Fuel Injection Fump with Fitted Governor

governor	delivery on control lever mp. 40°C (104°F)	Control rod stop 3a	Fuel delive	ery characteristics	Starting for the speed	Contret
rev/min	cm ³ /-1000 strokes	rev/min 3	rev/min	cm³/-1000 strokes 5	rev/min	cm ¹ /1000 strokes / mm
1300	92,0 - 94,0 (89,0 - 97,0)		600	81,0 - 84,0 (78,0 - 87,0)	100	116,0 - 126,0
·						

Checking values in brackets

B. Governor Settings

PRG che	ck Control rod travel	Full-load s Setting po			rev/min	Idle spe Setting (rev/min 7	Control rod travel	Test spe	cifications 5 Control rod travel	rev/min	Control rod travel mm
1	2	3	4	3							
							<u> </u>				1 1000 000000

Torque-control travel on flyweight assembly dimension a =

mm

Speed regulation At

1 mm less control

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load di governor di Test oil ten	elivery on control lever np. 40°C (104°F)	Control rod stop (3a)	Fuel delive	ery characteristics	3 b	Starting for Idle spee	Centres
rev/min	cm³/-1000 strokes	rev/min 3	rev/min	cm ³ /-1000 strokes 5		rev/min 6	cm ³ /1000 strokes / mm 7
				_			

Test Specifications Fuel Injection Pumps 1 and Governors

WPP 001/4 RVI 8,8 b 2 2 Edition

RQV 300-1150 PA 527-1K PES 6 P 120 A 320 RS 417

Values only apply to test nozzle-and-holder assembly 1 688 901 019 and fuel-injection test tubing 1 680 750 067.

supersed&.82 company:RVI engine. MIDR 062030 Komb.-Nr. 0 402 046 247

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

mm (from BDC)

Rotational speed	Control rod travel	Fuel delivery	Difference cm³/	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control v. 78)
rev/min	កាហា	cm ³ /100 strokes	100 strokes	mm	cm ³ /100 strokes	mm
1	2	3	4	2	3	
1150	8,5-8,6	14,8-15,0	0,5 (0,9)			
300	4,1-4,3	1,8-2,4	0,5 (1,2)			
						Į
						·

Adjust the fuel delivery from each outlet according to the values in

Port closing mark at 6° camshaft after port closing for 1st. B. Governor Settings cylinder at control-rod travel 9.0-12.0 mm.

Upper rated s	peed			Intermediate	rated sp	eed			Lower	rated	speed			Sliding sl	eeve travel
Degree of deflection of control		Control rod travel mm rev/min	(18) (28)	Degree of deflection of control lever	rev/min	Contro travel mm	ol rod	•	Degree defiect of con lever	tion	rev/min	Control travel mm	(3)	rev/min	mm 11
1	2 000	3 0 17		•	-	°			ca.	10	100	min.	5.7	250	0,4-0,7
max.	1200	15,2-17	್ಯಶ	-	-		-		Lu.	70	-00		٠,٠		
ca. 58	7.5	1205-12	15	ļ]		300	4,1-4	1,3	550	3,6-3,7
	1	1275-13			ļ	Ì			1		Ī			850	5,1-5,2
	4,0	15/2-13	000		ì	1	•							1150	7 5
	1450	0 - 1	.,0		l	Ì			330	-445				1150	7,5
	1				1	I			(3a)]			1	Ì

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

	d stop np. 40°C (104°F) 2	Rotational-speed (2b) timitation intermediate speed rev/min	Fuel deliv high idle s	peed 50 cm³/1000 strokes	awitchir		Torque- travel	control 5 Control rod travel mm
rev/min 1	cm ³ /1000 strokes -	3	4	5	6	7	8	9
1150	147,5-149,5 (144,5-152,5	1205-1215*	750 500	132,0-138,0 (129,0-141,0 80,0-86,0 (77,0-89,0)	300	130,0-150,0 18,0-24,0 100-220 (80-240)	350 750	8,5+0, 7,0+0, 7,7+0, 7,2+0,

Checking values in brackets

1 mm less control rud travel than col. 2

Test Specifications Fuel Injection Pumps 1 and Governors

WPP 001/4 RVI 8,8 d 1

2. Edition

PES 6 P 120 A 320 RS 419 RQV 275-1100 PA 495

Values only apply to test nozzle-and-holder assembly 1 688 901 019 and fuel-injection test supersedes 83

company: RVI engine: MIDR 062045

206 kW (280 PS)

Komb.-Nr.

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

0 402 046 249

Portoclosing mark 10,5° camshaft after port

A. Fuel Injection Pump Settings closing of cylinder 1.

2,8 - 2,9 mm (from BDC)

POR Closing at pres		2 75 2 951				T T T T T T T T T T T T T T T T T T T
Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm	cm ³ /100 strokes	100 strokes	mm :	cm ³ /100 strokes	mm
1	2	3	4	2	3	6
1100	10,3+0,	17,8 - 18,0	0,5(0,9)			
275	3,4-3,6	0,7 - 1,3	0,8(1,2)			
1			<u> </u>		<u> </u>	<u> </u>

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

tubing 1 680 750 067.

Testoil-ISO 4113

Upper rated s	peed			Intermediate	rated sp	eed	Lower rated	speed		Stiding st	leevo travel
deflection of control	rev/min Control rod travel mm	Control rod travel: mm rev/min		Degree of deflection of control lever	rev/min 5	Control rod travel mm 4	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 3	rev/min 10	mm 11
max.	1150	15,2-17	,8	-		-	ca. 8	200 275	min.5,2 3,4-3,6		1,0-1,2 4,0-4,6
ca.64	9,3 4,0 1350	1155-11 1220-12 0 - 1	250				280-395				5,9-6,1 8,1
							39				

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop		limitation	Fuel deliv	ery characteristics (5a)	idle	• —	Torque-control (5)	
Test oil ten	np. 40°C (104°F) , (2).	rev/min	1 4		switchir rev/min	cm ³ /1000 strokes	rev/min	Control rod travel mm
LDA 1100	0,7 bar 178,0-180,0 (175,0-183,0)	1155-1165*	LDA 700	0,7 bar 163,0-171,0 (160,0-174,0		130,0-150,0	_	-

Checking values in brackets

* 1 mm less control rod travel than col. 2

D. Prova dell'anticipo con arresto dipendente dalla pressione di alimentazione (LDA) RVI 8,8 d 1

· 2 -

Prova a n = 500	min 1 - pressione in aumento	e - sovrapressione in bar	RVI 8,8 d 1
Pompa/Regolatore	Regolazione pressione	Misurazione pressione _ bar relativa	Diminuizione Corsa asta - Differenza mm (1)
PES 6 PRS 419 + RQVPA 495	0,25	0,70 0 0,20	9,7 - 9,8 10,3 - 10,4 8,3 - 8,5 8,8 - 9,0

Note: (1) rispetto a n = min ¹ e pressione relativa ≈

bar (= corsa massima dell'asta a pieno carico)

Testoil-ISO 4113

Test Specifications Fuel Injection Pumps 1 WPP 001/4 RVI 12,0 c and Governors Edition 2.

RQV 250-1100 PA 570 PES 6 P 120 A 320 RS 426 Values only apply to test nozzle-and-holder assembly 1 688 901 019 and fuel-injection test tubing 1 680 750 067.

supersede10.81 company: RVI MIDS 063540 195 kW (265 PS) Komb.- Nr. 0 402 046 219

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings
2,8-2,9
Port closing at prestroke
(2,75-2,95) mm mm (from BDC)

Rotational speed Control rod travel		Fuel delivery	Difference	Control rod	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/m i n 1	mm 2	cm ³ /100 strokes 3	cm ³ / 100 strokes 4	mm 2	cm ³ /100 strokes 3	mm 6
650	10,3+0,1	18,0 - 18,3	0,5(0,9)			
250	4,9-5,1	1,3 - 1,9	0,8 (1,2)			1
	<u> </u>					

B. Governor Settings

Uppor rated t	Uppor rated speed			rated ap	eed	Lower rated	speed	Sliding sleeve travel		
		Control rod travel	deflection		Control rod travel	Degree of deflection		Control rod travel		①
of control lever	rod trave	mm rev/min (2	of control lever	rev/min	mm ④	of control lever	rev/min	mm ③	rev/m/A	mm 11
max. ca.61	1100 8,1 4,0 1400	15,2-17,1 1140-115 1220-125 0 - 1.0		-	-	ca. 9 275-400	100 250	min. 5,5 3,9-4,1	200 500 800 1100	0,7-1,0 3,4-3,6 4,8-4,9 6,9
						3a				

Torque control travel a = 1,2

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F) (2)		Rotational-speed (26) Smitation Intermediate speed	Fuel dalh high idle s	rery characteristics (5a)	Starting Idle switchin	. •	Torque- travel	control (5) Control rod	
rev/min	ciki ³ /1000 strokes .	rev/min 4a 3	rev/min	cm³/1000 strokes 5	rev/min 6	cm ² /1000 strokes 7	rev/min 8	travel mm	
LDA 650	0,7 bar 180,0-183,0 (177,0-186,0		LDA 1100 LDA 500	0,7 bar 170,0-173,0 (167,0-176,0) 0 bar 122,0-126,0 (119,0-129,0)		135,0-155,0	650 1030	9,1+0,2 10,3+0, 9,4+0,1 9,9+0,2	

Checking values in brackets

* 1 mm less control rod travel than col. 2

D. Adjustment Test for Manifold Pressure Compensator

RVI 12,0 c - 2 -

Test at n =

500

rev/min decreasing pressure - in bar gauge pressure

300		, <u> </u>	· · · · · · · · · · · · · · · · · · ·
Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1) .
PES 6 P. RS 426 + . PA 570	0,9	0 0,29 0,24	10,3 - 10,4 8,6 - 8,7 9,8 - 9,9 9,0 - 9,2

Notes:

(1) when n =

rev/min and gauge pressure =

bar (= maximum full-load control rod travel)

Testoil-ISO 4113

Test Specifications Fuel Injection Pumps 1 and Governors

WPP 001/4 MAN 11,4 a

3. Edition

PES 6 P 120 A 320 LS 429

ROV 259-1190 PA 582 (1) RQ 250/1100 PA 581 (2) supersedet, 81 compan MAN

Komb.-Nr. 0 402 046 223 (1)

0 402 046 222 (2)

D2566 MKUL 235 kW (320 PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

3,0 - 3,1mm (from BDC) Zy1.6 Port closing at prestroke 95 -3 15 Spring pre-tensioning (torque-control valve) Control rod Fuel delivery **Fuel delivery** Difference Rotational speed Control rad cm³/ 100 st/okes cm³/100 strokes mm cm³/100 strokes rev/min 0,5(0,9)12,9 +0, 22.0 - 22.4750 1,2 - 1,80.8(1.2)250 6,2-6,4

Adjust the fuel delivery from each outlet according to the values in [

B. Governor Settings

RQV .. PA 582

Upper rated s	peed			Intermediate	reited spe	ed d	Lower rated	Lower rated speed Sliding slee			cove travel
1		Control rod (travel	(1)	Degree of deflection		Control red travel	Degree of deflection		Control rod travel	· ·	0
	rod travel	mm rev/min (20)	of control lever	rev/min	mm (4)	of control lever	rev/min	mm ③	rev/min	mm
1	2	3		4	5	6	7	8	9	10	11
max.	1100	15,2-17	7,8				ca. 13		, ,		1,6-1,7
ca. 68	10,4,6	1					355-47	ļ	6,2-6,4	500 800	4,0-4,3 5,5-5,7
	1400	0 -	1,0				3			1100	8,1

Torque contro! travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F) 2 rev/min cm³/1000 strokes		Rotational-speed (2b) limitation intermediate speed	high idle s	rery characteristics (5e) peed (50) # cm³/1000 strokes	Starting Idle switchir rev/min	ng point	Torque- traval	Control (5) Control rod travel mm
1	2	3	4	5	6	7	8	9 +0,1
LDA 750	1,0 bar 220,0-224,0 (217,0-227,0)	1140-1150*	LDA 1100 650 LDA 500 LDA	212,0-218,0 0,29 bar 138,0-144,0 0 bar	250		750	12,9 12,5

Checking values in brackets

* 1 mm less control rod travel than col. 2

* Checking tolerance - 3 cm³

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Checking PRG chei	g of slider ck 1	Full load : Setting po	•	•	cifications (4)	idle sper Setting p	point		cifications (5)	Torque d	(3
	Control rod travel mm 2	rev/min	Control rod travel mm 4	Control rod travel mm 5	rev/min	rev/min 7	Control rud travel mm 8	rev/min 9	travel mm	rev:min 11	travel mm
600	19,2-20,8	1300	20,0		1145.1160 1185-1215 0 - 1,0	250	6,3	250	min.7,8 6,2-6,4 875=2,0mm	1005 925	11,4-11,5 11,7-12,0 12,5-12,7 12,9-13,0

Torque-control travel on flyweight assembly dimension a

Speed regulation At

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

	elivery on ontrol lever op 40 C (104 F)	Control rad stop 3a	Fuel delive	(24)	Starting fi	tiel delivery (1) Control 10d travel
rev/min 1	cm ³ /- 1000 strokes 2	rev/min 3	rev/min 4	cm ³ / - 1000 strokes 5	rev/min	cm ³ /1000 strokes / m m
LDA 750	1,0 bar 220,0-224,0 (217,0-227,0)	. •	LDA 1100 650 LDA 500 LDA 500	1,0 bar 185,0 - 191,0 212,0 - 218,0 0,29 bar 138,0 - 144,0 0 bar 115,0 - 119,0	100	215,0-235,0

Checking values in brackets

* Checking tolerance ± 3 cm³

D. Adjustment Test for Manifold Pressure Compensator

Test at n = 500 rev/min decreasing pressure - in bar gauge pressure

	increasing		
Pump/governor	Setting	Measurement	diminution Control rod travelidifference
	Gauge pressure bar	Gauge pressure bar	mm (1)
LS 429 - RQVPA 582 + RQPA 581	1,0	0 0,29 0,58	12,9 - 13,0 9,6 - 9,7 10,5 - 10,6 12,3 - 12,5

Notes

(1) when ភ =

rev/min and gauge pressure a

bar (= maximum full-load control rod travel)

En

Testoil-ISO 4113

Test Specifications Fuel Injection Pumps and Governors

WPP 001/4 MB 9,5 a 2

2. Edition

En

PES 5 P 110 A 820 LS 434

RSV 350-750 P 1/487

1 - 3 - 5 - 4 - 2 je $72^{\circ} - 0.5^{\circ} (-0.75^{\circ})$

supersected . 82 Daimler-Benz company: 0M 409

Komb.-Nr. 0 402 075 001

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

(2.95-3.15)

mm (from BDEgl. 5; RW = 9,0 - 12,0 mm

		£,33-0,10)				
Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm	cm ³ /100 strokes	100 strokes	mm	cm ³ /100 strokes	mm
1	2	3	4	2	3	6
730	13,1+0,1	13,5 - 13,7	0,4(0,8)			
350	7,7 -7,9	1,1 - 1,7	0,4(0,7)			
					'	
					1	
Į		[.l	<u> </u>	<u></u>	

Adjust the fuel delivery from each outlet according to the values in [

B. Governor @ettings

Upper	rated speed		Intermediate	rated spe	ed	4 Lower	r rated spe	3 Torque control		
Degree of deflection of control lever		Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel	Degree of deflection of control lever	rev/min	Control rod travel mm	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	10	11
loose	800	0,3-1,0	-	•	•	•	·	-	-	-
	x =	2,5								
ca. 34	12,1 4,0 850	750-755 785-795 0,3-1,7	İ							

Set idle-speed auxiliary spring at 2 mm control-mod travel The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Atted Governor

2 Full-k	oad stop	6 Rotational- speed limitat.	Rotational-speed limitat. Salar Fuel delivery characteristics		Starting Idle	fuel delivery	(5a) Idle stop		
Test oil temp. 40°C (104°F) rev/min cm³/1000 strokes 1 2		Note: changed to rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm³/1000 strokes 7	rev/m i n 8	Control rod travel mm 9	
730	135,0-137,0 (132,0-140,0	750 - 755*	•	<u>•</u>	100	130,0-150,0	-	-	

Checking values in brackets

* 1 mm less control rod travel than col. 2

Testoil-ISO 4113

Test Specifications Fuel Injection Pumps and Governors

WPP 001/4 RVI 14,9 a

2. Edition

RO 750 PA 596 PES 8 P 120 A 320 RS 437 Komb.-Nr. 0 402 048 038 1 - 8 - 4 - 2 - 7 - 3 - 6 - 5 je $45^{\circ} \div 0,5^{\circ} (0,75^{\circ})$ supersedes. 81 RVI company MIVS (R) 083 530 250 kW (340 PS)

Values only apply to test nozzle-and-holder assembly 1 688 901 019 and fuel-injection test

tubing 1 680 750 067.
All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers.

A. Fuel Injection Pump Settings

Port closing at prestroke

mm (from BD 2 1 . 5 (2,75-2,95)

Rotational speed rev/min	Control rad travel mm 2	Fuel delivery cm ³ 7100 strokes 3	Difference cm³/ 100 strokes	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
700	13,1+0,1	26,7 - 26,9	0,5(0,9)			
250	5,0-5,2	1,5- 2,1	0,8(1,2)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Checkin	g of slider	Full-load s	speed re	gulation		idle spec	_			Torque	control
rev/min	Control rod travel mm	Setting po	Control red travel mm		cifications Control rod Iravel mm 6	setting prev/min	Control red Gravel	rev/min	cifications Control rod travel mm 10	rev/min	Control rod travel mm 12
•	-	-	_	12,1 4,0 900	750-755 776-789 0 - 1,0	-	-	-	-	-	-
			į								

Torque-control travel on flyweight assembly dimension a =

Speed regulation: A750-755 min -1

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

	elivery on ontrol lever np. 40°C (104°F)	Control rod stop	Fuel deliv	ery characteristics	Starting f	Starting fuel delivery		
rev/min 1	cm ³ /- 1:000 strokes 2	rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min	cm³/100 strokes 7		
700	267, 0-269, 0 (264, 0-272, 0)	-	-	-	100	19,5-21,0 mm RW		
				·				

Checking values in brackets

Test Specifications Fuel Injection Pumps 1 and Governors

WPP 001/4 RVI 9,8 b 1

2. Edition

PE 6 P 120 A 321 RS 438

ROV 275-1200 PA 648

Values only apply to test nozzle-and-holder assembly 1 688 901 019 and fuel-injection test tubing 1 680 750 067.

supersedes 83 Company RVI MID 062045 Komb.-Nr. 0 401 856 153

Testoil-ISO 4113

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

3,5-3,6 Port closing at prestroke mm (from BDC)

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm³/ 100 strokes	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1200 275	11,2+0,1 5,9 - 6,1		0,5(0,9) 0,8(1,2)			

Adjust the fuel delivery from each outlet according to the values in [

B. Giovernor Settings

Upper rated	speed		Intermediate	rated sp	eed	Lower rated	speed		Sliding sleeve travel	
deflection	Control	Control rod travel	Degree of deflection		Control rod travel	Degree of deflection		Control rod travel	G., G., J.	0
of control lever	rod travel mm 2	rev/min 2a 3	of control lever 4	rev/min 5	mm 4	of control lever 7	rev/min	mm 3 9	rev/min 10	mm 11
max:.	1230	15,2-17,8	•	-	-	ca. 11	100 275	min. 7,5 5,9-6,1	250 570	0-0,9 4,7-5,0
ca., 65		1240-1250 1335-1365 0-1,0				270 - 365	2/5		880 1200	6,1-6,3 8,3
<u></u>						②				

Torque control travel a =

mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-roc Test oil ten	stop	Rotational-speed 20 limitation intermediate speed			Starting idle switching	. •	Torque-control 5 travel Control rod	
rev/min 1	cm³/1000 strokes . 2	revimia 40 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm³/1000 strokes 7	rev/min	travel mm 9
1200			-	100	180,0-200,0	•	•	
	(131,0-140,0)			·	275	7,0-13,0		

Checking values in brackets

* 1 mm less control rod travel than col. 2

Test Specifications Fuel Injection Pumps (A) and Governors

WPP 001/4 DAF 11,6 u

3. Edition

PE 6 P 110 A 720 RS 441

RSV 250-1200 P 5/493

supersedes 1.83 DAF company DHS 825

Komb.-Nr. 0 401 876 252

engine

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

(2,75-2,95)

mm (from BDC) RW=9,0-12,0 mm

Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm 2	cm ¹ /100 strokes	100 strokes	mm 2	cm ³ /100 strokes	mm 6
1000	12,2+0,1	13,7-13,9	0,4(0,8)			
250	5,0-5,2	0,7-1,2	0,4(0,7)			
				<u> </u>		

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Degree of deflection	rated speed Control rod travel mm	rev/min Control rod travel mm rev/min	Interme	ediate rated	speed	Control- lever deflection in degrees 7		rated speed Control rod travel mm	11 3 1	rque control Control rod travel mm
100se	800 X =	0,3 -1 ,0 = 5,0	-	-	-	ca. 24	250	4,6 5,0-5,2 85=2,0	400 300	12,4-12,5 12,6-13,1
ca. 58	11,2 4,0 1500	1240-1250 1330-1360 0,3-1,7								

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

	n-load stop	8 Rotational- speed limitat		el delivery aracteristics	Starting f	uel delivery 5	4a Idle stop		
Test oil to rev/min	emp. 40°C (104°F) cm³/1000 strokes 2	Note: changed to) rev/min 3	rev/min	cm³/1000 strokes	rev/min 6	cm³/1000 strokes 7	rev/min 8	travel mm 9	
LDA 1000	0,7 bar 136,5-138,5 134,0-141,0)	1240-1250*	LDA 600	0 bar 91,5-94,5 (89,0-97,0)	100	245,0-285 (241,0-285 =19,5- 21,0 mm RW	,0 250 ,0)	5,1	

Checking values in brackets

* 1 mm less control rod travel than col. 2

D. Adjustment Test for Manifold Pressure Compensator

DAF 11,6 u

-2-

Testat n =

500

rev/min decreasing pressure - in bar gauge pressure

Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure = bar	Gauge pressure ≃ bar	mm (1) .
PE 6 PRS 441 + RSVP 5/493	0,70	0 0,36 0,30	12,2-12,3 10,2-10,3 11,7-11,8 10,9-11,3

Notes

(1) when n =

rev/min and gauge pressure =

bar (= maximum full-load control rod travel)

G14

En 514

Test Specifications Fuel Injection Pumps (A) and Governors

40

WPP 001/4 DAF 11,6 u 2

1. Edition

PE 6 P 110 A 720 RS 441-1

RSV 250-750 P 7/479-1

Komb.-Nr. 0 401 876 270

supersede3 DAF company

engine DHS 825 A

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

Testoil-ISO 4113

2,8 - 2,9 (2,75-2,95)

mm (from BDC)

Rotational speed	Control rod travel	Fuel delivery	Difference	Control rodi travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm (2)	cm³/100 strokes	cm ³ / 10G strokes	mm	cm1/100 strokes	rom:
1	2	3	4	2	3	6
750	11,6+0,1	14,5-14,7	0,4(0,75)			
250	4,8-5,0	0,9-1,3	0,45(0,75)			
]				
	1					
			1			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

		rated speed		Interme	Intermediate rated speed			Lower	rated speed	rated speed Control roc Torque	
-	deflection	Control rod travel mm	Control rod travel mm rev/min				Control- lever deflection	rev/min	travel mm	rev/min	travel mm
	lever 1	2	3	•	5	6	in degrees 7	8	9	10	11
	loose	800	0,3-1,0	-	-	•	ca. 18	250	4,9	-	-
٠.,		x =	4,0					250 250-29	4,8-5,0 $0 = 2,0$		
	ca. 45	10,6 4,0 950	790-795 810-825 0,3-1,7						**		

The numbers denote the sequence of the tests

Set auxiliary idle spring at 2.0 mm control-rod travel.

C. Settings for Fuel Injection Pump with Fitted Governor

(2b) Full-load stop		6 Rotational- speed limitat	Rotational- speed limitat 3a Fuel delivery characteristics			Starting fuel delivery 5 4a Idle stop		
revimin	emp. 40°C (104°F) cm-/1000 strokes 2	Note: changed to) rev/min 3	rev/miñ 4	cm³/1000 strokes 5	rev/min	cm³/1000 strokes 7	rev/min 8	travel mm 9
750	144,5-146,5 (142,0-149,0)	790-795*	-	•	-	-	-	-

Checking values in brackets

* 1 mm less control rod travel than col. 2

BOSCH

515

Testoil-ISO 4113

40

WPP 001/4 MB 11,4 1 4

3. Edition

En

PES 6 P 110 A 820 LS 442 Komb.-Nr. 0 402 076 052 RSV 350-750 P 1/487

supersedes 1.83

company

Daimler-Benz

engine

OM 407

121 kW

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection, Pump Settings

Port closing at prestroke

(3.15-3.35)

mm (from BDOZyl. 6

Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm 2	cm ³ /100 strokes	cm³/ 100 strokes	mm 2	cm ³ /100 strokes 3	mm 6
730	12,1+0,	11,9 - 12,1	0,4(0,8)			
350	8,1-8,3	1,3 - 2,1	0,4(0,7)			
					•	
			,			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

	rated speed	Control rod	Intermediate rated speed Degree of			Lower rated speed Degree of 1			3 Tor	que control
Degree of deflection of control lever		travel	deflection of control lever	rev/min	mm	deflection of control lever	tev/min	travel mm	rev/min	travel mm
1	2	3	4	5	6	7	8	9	10	11
loose	800 x=	0,3-1,0 2,5	-	•	•	~	-	-	-	-
©ca.35	11,1 4,0 850	1								

Set idle-speed auxiliary spring at 2 mm control-rod travel

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2 Full-to	oad stop	6 Rotational- speed limitat.				fuel delivery	5e idle stop		
Test oil temp. 40°C (104°F) rev/min cm³/1000 strokes 1 2		Note: changed to rev/min 3	rev/min cm³/1000 strokes 4 5		rev/min cm ³ /1000 strokes 6 7		rev/min 8	Control rod travel mm 9	
730	119,0 - 121,0 (116,0 - 124,0		-	•	100	130,0-150,0 (126,0-154,	0)	-	

Checking values in brackets

* 1 mm less control rod travel than col. 2

Test Specifications Fuel Injection Pumps (A) and Governors

WPP 001/4 DAF 8,3 0 1. Edition

PE 6 P 100 A 720 RS 447

Komb.-Nr. 0 401 876 260

RSV 250-1200 P5/493

DAF

DHT 825

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Testoil-ISO 4113

(3,15-3,35)

mm (from BDC)

Rotational speed rev/min	Control rod travel	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1000	11,4+0,1	11,8-12,0	0,3(0,6)			_
250	5,3-5,5	0,7-1,1	0,3(0,5)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

(1) Uppe	r rated speed	rev/min	Interme	diate rate	speed	(4)		rated speed	11.31	rque control
Degree of deflection of control lever	Control rod travel mm	Control rod travel mm rev/min	4	5	6	Control- lever deflection in degrees 7	rev/min	Control rod travel mm	rev/mir:	Control rod travet mm
loose	800	0,3-1,0	-	-	-	ca.24	250	4,9	400 300	11,6-11,7 11,8-12,1
10036	X =	: 5,0					100	min. 7,0	300	11,0-12,1
ca.58	10,4 4,0 1530	1240-1250 1325-1355 0,3-1,7					250 540-60	5,3 - 5,5 0 = 2,0		

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

(2b) +	dots because	6 Rotational- speed limitat				Starting fuel delivery 5 4a Idle stop			
Test oil to rev/min	emp. 40°C (104°F) cm³/1000 strokes 2	Note: changed to) rev/min 3	rev/min	cm ³ /1000 strokes	rev/min	cm³/1000 strokes 7	rev/min 8	Control rod trävel mm 9	
LDA 1000	0,7 bar 118,0-120,0 (116,0-122,0)	1240-1250*	LDA 600	0 bar 94,0-97,0 (92,0-99,0)	100	190,0-210, bei 19,5- 21,0 mm Rk		<u>-</u>	

Checking values in brackets

* 1 mm less control rod travel illan col. 2

6.83

Geschäftsbereich KH. Kundendienst. Kfz-Ausrüstung. € 1980 by Robert Bosch GmbH, Postfach 50, D-7000 Stuttgart t. Printed in the Federal Republic of Germany Imprimé en République Fedérals d'Allemagne par Robert Bosch GmbH.

D. Adjustment Test for Manifold Pressure Compensator

DAF 8,3 e

- 2 -

Testatn =

600

rev/min decreasing pressure - in bar gauge pressure

Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1) .
PE6PRS447	0,32		11,1 - 11,2
+ RSVP5/493		0,70	11,4 - 11,5
	·	0	10,4 - 10,5
		0,23	10,5 - 10,9

Notes:

(1) when n =

rev/min and gauge pressure =

bar (# maximum full-load control rod travel)

Test Specifications Fuel Injection Pumps 1 WPP 001/4 BAO 10,6 a and Governors

2. Edition

PES 4 P 120 A 320 RS 451 Komb.-Nr. 0 402 044 020

RQV 350-900 PA 618

supersedes 1.83

Baudouin company: DNP 4

Values only apply to test nozzle-and-holder

assembly 1 688 901 019 and fuel-injection test

107 kW (145 PS)

tubing 1 680 750 067.

Testoil-ISO 4113

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at pres		/A 75-A-A-A	mm (from BDC)	0.75 0.05							
Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm³/100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm: 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6					
900	12_6+0.	19.7-19.9	0,5(0,9)								
350	7,6-7,	2,8-3,4	0,8(1,2)								
			Į Į								
<u> </u>	1				<u> </u>	1					

Adjust the fuel delivery from each cuttet according to the values in

B. Governor Settings

Upper rated s	peed			Intermediate	rated spe	ed		Lower rated	speed		Sliding s	leeve travel
deflection		ASAB.	シ	Degree of deflection of control		Contro travel	l rod	Degree of deflection of control		Control rod travel		0
4		rev/min (lever	rev/min 5	mm 6	•	lever 7	rev/min 8	mm (3) 9	rev/min 10	mm 11
max.	940	15,2-17	,8	•			_	ca.30	100	min.9,2	325	1,1-1,3
ca. 60	11,6 4,0 1150	1000-103	_					350-440	350	7,6-7,8	500 750 900	3,1-3,8 6,0-6,4 8,0
								39				

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Futl-load d Control-ro Test oil ten	d stop np. 40°C (104°F) 2	Rotational-speed (2b) Fuel delivery characteristics (5e) limitation high idle speed (5b) rev/min cm³/1000 strokes		Starting Idle switchin	ng point	Torque- travel	Control rod travel mm	
1	2	3	4	5	6	7	8	9
900	197,0-199,0 (194,0-202,0		-	•	100	175,0-195,0 (171,0-199,0)	•	•

Checking values in brackets

* 1 mm less control rod travel than col. 2

Test Specifications Fuel Injection Pumps 1 and Governors

WPP 001/4 BAO 13,2 a

2. Edition

PFS 5 P 120 A 320 RS452 ROV 350-900 PA 618 1 - 2 - 4 - 5 - 3 je $72^{\circ} - 0.5^{\circ} (-0.75^{\circ})$

supersec@s 83 companyBaudouin engine: DNP 5

Values only apply to test nozzle-and-holder assembly 1 688 901 019 and fuel-injection test tubing 1 680 750 067.

Komb.-Nr. 0 402 045 025

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection, Pump Settings

12.6+0.1 19.7-

7,6-7,8

Control rod

mm

Port closing at prestroke

Rotational speed

900

350

rev/min

(2,75-2.95)Fuel delive

cm³/100/s¹

uel delivery	Difference cm ³ / 100 strokes 4	Control rod travel mm	Fuel delivery cm ³ /190 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
19,7-19,9	0,5(0,9)			
2,8-3,4	0,8(1,2)			

Adjust the fuel delivery from each outlet according to the values in [

B. Governor Settings

Upper rated	speed			Intermediate	rated sp	eed		Lower rated speed				Sliding s	eeve tay	rel
Dogree of deflection of control lever	rev/min Control rod travel mm	Control rod (travel mm rev/min ((a) (2a)	Degree of deflection of control lever	rev/min 5	Control travel mm 6	l rod	Degree of deflection of control lever	rev/min 8	Contro: travel mm 9	rod 	rev/min 10	mm 11)
max.	940	15,2-17,	8	-	-	-	•	ca.30		min.9	-	325	1,1-1	,3
ca.60	1 -	940-950 1000-103 0-1,0	30					350-440 ③	ł	¹ 7,6-7	7,8		3,1-3 6,0-6 8,0	,4

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load of Control-ro Test oil te		Rotational-speed 20 limitation intermediate speed				Idle .		Control Control roc
rev/min	cm ³ /1000 strokes ·	rev/min 49	rev/min	cm³/1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	
1	2	3	4	5	6	7	8	9
900	197,0-199,0 (194,0-202,0)	940-950*	-	-	100	175,0-195,0 (171,0-199,0)	-	-

Checking values in brackets

* 1 mm less control rod travel than col. 2

Testoil:ISO 4113

Test Specifications Fuel Injection Pumps ② and Governors

WPP 001/4 MAN 11,9 a 1. Edition

PE 6 P 120 A 720 LS 470

RQ 250/1100 PA 684

MAN

Komb.-Nr. 0 402 046 288

company: D 2866 KF

Values only apply to test nozzle-and-holder assembly 1 688 901 019 and fuel-injection test 265 kW

tubing 1 680 750 067.

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

mm (from BDC)Zy1.6; RW = 9,0-12,0 mm

Officion and at billion	_	(2,73-2,33)				
Rotational speed	Control rod travel	Fuel delivery cm ³ /100 strokes	Difference cm ³ / 100 strokes	Control rod travel mm	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
750	12,5+0,1	23,8-24,0	0,5(0,9)			
250	5,2-5,4		0,8(1,2)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Checking PRG che	g of slider	Full-load to			cifications (4)						
rev/min 1	Control rod travel mm	rev/min	Control rod travel rnm 4	Control red travel rners	rev/min	rev/min 7	Co-trol red travel mm 8	rev/min 9	Control rod travel mm	rev/min 11	Control rod travel mm
600	19,2-20,8	600	20,0	10,3 4,0 1300			5,3	250	min.6,8 5,2-5,4 55 = 2,0	1100 935	12,5-12,6 11,3-11,4 12,4-12,6 11,7-12,0
	control travel		0.4	15			1	145-1	160 min-1		1 mm less contro

Torque-control travel on flyweight assembly dimension a =

0,45 mm

Speed regulation: At

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de governor c Test oil terr	phivery on ontrol lever ap. 40°C (104°F)	Control rod stop 3a	Fuel deliv	ery characteristics 3b	Starting fuel delivery Idle speed		
rev/min	cm ³ /-1000 strokes 2	rev/min 3	rev/min 4	cm³/-1000 strokes 5	rev/min 6	cm ³ /1000 strokes:/ mm · 7	
LDA 750 LDA 1100	1,0 bar 238,0-240,0 (235,0-243,0) 1,0 bar 213,0-219,0 (210,0-222,0)	•	LDA 650 LDA 500	1,0 bar 239,0-245,0 (236,0-248,0) 0 bar 139,0-141,0 (136,0-144,0)	100	225,0-245,0 (221,0-249,0)	

Checking values in brackets

D. Adjustment Test for Manifold Pressure Compensator MAN 11,9 a

Testatn =

500

rev/min decreasing pressure – in bar gauge pressure

Pump/governor	Setting		Measurement	diminution Control rod travel- difference
	Gauge pressure =	bar	Gauge pressure = ba	r mm (1) .
PE6PLS470 + RQPA684	1,0		0 0,40 0,24	12,5 - 12,6 9,3 - 9,4 11,1 - 11,2 9,8 - 10,2

Notes.

(1) when n =

rev/min and gauge pressure =

bar (= maximum full-load control rod travel)

Testoil-ISO 411

Test Specifications Fuel Injection Pumps 2 WPP 001/4 MB 12,862 and Governors

3. Edition

PE 8 P 100 A 320 LS 810 Komb.-Nr. 0 401 848 038 RO 30C/1250 PA 187 R

supersedel 0.79 company:Daimler-Benz

OM 402

188 kW (256 PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testors

1 - 8 - 7 - 2 - 6 - 3 - 5 - 4 je $45^{\circ} \pm 0.5^{\circ}$ ($\pm 0.75^{\circ}$)

A. Fuel Injection Pump Settings

Port closing at prestroke

(3.35-3.55)

mm (from BDQZy]. 8

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm³/100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1250	10,6+0	1 10,2-10,4	0,3(0,6)			
300	7,4-7	6 1,3- 1,9	0,3(0,5)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Checkin	g of slider ck (1)	_	Full-load speed regulation Setting point Test specifications (4)						(-)	Torque o	(3)
rev/min	Cordrol rod travel mm	rev/min 3	Control red travel rnm	Central rad stavel rnm 5	rev/min	rev/min 7	Control red traval rom 8	rav/min 9	Control rod travel mm	rev/min 11	Control rod University
600	13,8-14,6	600	14,2	9,6 4,0 1500			7,5	100 300 405-	min.9,0 7,4-7,6 145= 2,0	1250 600	10,6-10,7 10,6-10,8
<u></u>	i	<u> </u>	<u> </u>	L	<u> </u>	<u></u>	1	 295-1	1 310 min		1 mm less contro

Torque-control travel on flyweight assembly dimension a ...

Speed regulation: At

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load d governor o Test oil ter	elivery on control lever np. 40°C (104°F)	Control rod stop	Fuel deliv	ery characteristics	Starting for speed	Starting fuel delivery Idle speed Control		
rev/min	cm³/-1000 strokes	rev/min 3	rev/min 4	cm ³ /-1000 strokes	rev/min 6	rad travel cm ³ /1000 strokes:/ mm 7		
1250	102,0 - 104,0 (100,0 - 106,0)	600	600	79,0 - 84,0 (77,0 - 86,0)	100	110,0 - 130,0		

Checking values in trackets

8.83

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Test specifications Fuel injection pumps and governors

WPP 001/4 MTU 29,9 a

9. Edition

PE 8 ZWM 140/120 RS 19/11

RQU 375/1100 ZWA 19 DR RQU 375/1100 ZWA 25 DR Replaces · · ·

1 - 2 - 6 - 3 - 4 - 5 - 7 - 8 je $45^{\circ} \pm 0,5^{\circ} (\pm 0,75^{\circ})$

Firm: MTU Engine: MB 837 A a

See Service Information VDT-I-420/112

All test specifications apply only to Bosch fuel-injection pump test benches and equipment

A. Fuel-injection-pump settings

Port closing at prestroke 2.0-2.1

mm (from BDC) Zyl. 8

Rotational	Control-	Fuel delivery	Difference	Fuel delivery	Spring pre-tension (torque-control
speed	rod travel	Average value	in fuel delivery	Checking values	valve)
min-1	mm	cm³/1000 strokes	cm ³ /1000 strokes	cm ³ /1000 strokes	
1	2	3	4	5	
600	18,0	373,0-378,0	11,0 (16,0)	369,0-382,0	
600	9,0	143,0-163,0	14,0(21,0)	148,0-168,0	
200	9,0	71,0-91,0	14,0 (21,0)	66,0-96,0	
1080	-	C, Sp. 2	8 (12)		
500	-	C, Sp. 5	11 (16)		İ
Í	Ţ	1			1
		į			

Adjust the fuel delivery from each outlet according to the values in

B. Governor settings

Upper rated Control lever deflection degrees	speed min-1 2	Control- rod travel mm 3	Medium ra Control lever flection degrees 4	ted spee min-1 5	cd Control- rod travel mm 6	Lower rat Control lever de- flection degrees 7		Control- rod travel mm 9	i i	e control Control- rod travel mm 11
max. ca. 58	500 1100 1130 1200 1250 1350	23,5-24,0 19,0-19,5 15,0-18,0 6,2-12,4 0-7,8 0-1,8 0,8	-	-	-	ca. 22	150 375 500 600 1100 1180	2,3-3,1 2,1-2,6	700 1000 1100	21,7-22, 20,9-21,5 19,5-20,0 19,0-19,5 max. 1 mm

Torque control travel dimension a -

C. Settings for fuel-injection pump with fitted governor

on gove	delivery rnor control lever temperature 40°)	Control rod stop at speed	Fuel-de charact		Starting fuel delivery		
min-1 1	cm ³ /1000 strokes	min-1 3	min~1 4	cm³/1000 strokes 5	min-t 6	cm ³ /1000 strokes 7	
1080	232,0-236,0 (229,0-239,0		500	212,0-220,0 (209,0-223,0	-		

Checking values in brackets

WPP 001/4 MAN 11,9 a1

1. Edition

PE 6 P 120 A 720 LS 470 Komb.-Nr. 0 402 046 295 ROV 250-1100 PA 700

suparsedes_

company: MAN

engine:

D2866 KF

265 kW

Values only apply to test nozzle-and-holder assembly 1 688 901 019 and fuel-injection test

tubing 1 680 750 067.

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

mm (from BDC) Zy1. 6; RW = 9,0 - 12,0 mmPort closing at prestroke

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
750	12,5+0,	23,8-24,0	0,5(0,9)			
250	5,2-5,	1,2-1,8	0,8(1,2)			
				,		

Adjust the fuel delivery from each outlet according to the values in [

B. Governor Settings

Uppe: rated :	speed		Intermediate	rated sp	eed	Lower rated	speed	•	Sliding s	leeve travel
Degree of deflection of control	rev/min Control rod travel	Control rod travel	Degree of deflection of control		Control rod travel	Degree of deflection of control		Control rod travel		1
lever	mm	rev/min (28	lever	rev/min	mm (4)	lever	rev/min	mm (3)	rev/min	mm
] 1	2	3	4	5	6	7	8	9	10	11
max.	1170	15,2-17,8	-	-	-	ca.9	100	min.6,8	325	1,6-2,0
ca.62	10,3 4,0 1350	1140-1150 1225-1255 0 - 1,0						1 5,2-5,4 -420=2,0	800 1100	5,3-5,5 7,8
į						30				

Torque control travel = 1,15

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load d Control-ro Test oil ten	d stop np. 40°C (104°F) 2	limitation intermediate speed	high i∂∄e s	very characteristics 5a speed 50 cm ³ /1000 strokes	idle switchin	. •	Torque- trevel	Control 5 Control rod travel mm
1	2	3	4	5	6	7	9	9
LDA 750 LDA 1100	1,0 bar 238,0-240,0 (235,0-243,0) 1,0 bar 213,0-219,0 (210,0-222,0)	1140-1150*	LDA 500 LDA 500	0,4 bar 193,0-195,0 (190,0-198,0) 0 bar 139,0-141,0 (136,0-144,0)		225,0-245,0 (221,0-249,0	1100	12,1+0

Checking values in brackets

* 1 mm less control rod travel than col. 2

D. Adjustment Test for Manifold Pressure Compensator

MAN 11,9 a 1 -2-

Test atn =

500 rev/min decreasing pressure - in bar gauge pressure

Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure ≈ bar	Gauge pressure = bar	mm (1) .
PE6PLS 470 +RQVPA 700	1,0	0 0,40 0,24	12,5-12,6 9,3-9,4 11,1-11,2 9,8-10,2

Notes

(1) when n =

rev/min and gauge pressure =

bar (= maximum full-load control rod travel)

WPP 001/4 MB 9,6 h

2. Edition

PE 6 P 100 A 320 LS805

RQ 300/1150 PA436R

EP/RSV 575-1250 P1/817R (2)

(1)

supersedes 10.78 company:Daimler-Benz

engine: OM 401

Komb.-Nr. 0 401 846 406 (1) 0 401 876 203 (2) (1 = 141 kW - 192PS)

(2 = .129 kH - .175PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

(3,35-3,55)

mm (from BDC)

Zy1.6

Rotational speed	Control rod travel	Fuel delivery (1) cm³/100 strokes 3		Control rod travei mm 2	Fuel delivery (2) cm ³ /100 strakes 3	Spring pre-tensioning (torque-control valve) mm
1130	10,5+0,	1 10,1 - 10,3	0,3(0,6)	10.1 +0,1	9,3 - 9,5	n = 1230
350	7,8-8,0	2,5 - 3,0	0,3(0,5	6,0-6,	2 1,2 - 1,8	n = 575

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

436R (1)

PRG che	Control rod travel	Full-load s Setting po rev/min		Test spec Cornal and travel mm	\sim	Idle spec Setting p	coint Control red travel		cifications 5 Control rod	Torque c	Control rod travel
650	13,8-14,6	650	14.2	9,5	1180-1195	300	7,9	100	min.9,4	-	-
	,0,0,0			4,1	1250-1280			300	7,8-8,0		
	·			1400	0 - 1,	þ		360-4	00=2,0		
	i	٠	-	1	1		1	180-1	195 min	•	1 mm less contro

Torque-control travel on flyweight assembly dimension & =

Speed regulation: At

1 mm less control md travel

C. Settings for Fuel Injection Pump with Fitted Governor

povernor o	letivery on control lever np. 40°C (104°F)	Control rad stop 3a	Fuel delive	ery characteristics	3 b	Starting full Idle speed	Contret
rev/min	cm ³ /-1000 strokes	rev/min 3	rev/min	cm ³ /-1000 strokes 5		rev/min 6	ad trivel cm ³ /1000 strokes/ mm 7
(1) 1130	101,0 - 103,0 (99,0 - 105,0)	650	-	-		100	110,0 - 130,0 106,0-134,9)
							./.

Checking values in brackets

B. Governor Settings

817R (2)

Upper Degree of deflection of control lever	rated speed	Control rod travel mni	Intermediate Degree of deflection of control lever		Control rod travel mm	Degree of deflection of control lever 7	rev/min	Control rod travel mm	rev/min	Control rod travel
lose	800	0,3-1,0		<u></u>	. <u>. </u>	ca.30	575	4,7	**	
	×	4,6					200 575	min.19 4,6-4,8		
ca.63	9,1 4,1 1400	1265-1275 1290-1305 0,3-1,7			F 7 0 mm	control	570-6 650	30 = 2,0 0 - 1		

** Set idle-speed auxiliary spring at 2,0 mm control-rod travel the numbers denote the sequence of the tests then 1/4 turn back injection Pump with Fitted Governor C. Settings for Fuel Injection Pump with Fitted Governor

2) Full-load	stop	6 Rotational- speed limitat		el delivery aracteristics	Starting Idle	tuel delivery	(5a) Idio	stop Control rod
	40°C (104°F) cm³/1000 strokes 2	Note: changed to rev/min 3	rev/min	cm²/1000 strokes 5	rev/min	cm³/1000 strokes 7	rev/min 8	travel mm 9
	93,0-95,0 91,0-97,0)	1265-1275*	6a		1300	110,0-130,0 4,1 mm RW g. max.4 (6		

Checking values in brackets

Testoil-ISO 4113

* 1 mm less control rod travel than col. 2

B. Governor Settings

1 Upper Degree of deflection of control lever	rated spee	Control rod travel mm	Intermediate Degree of dellection of control lever	rev/min	Control rod travel mm	d	Lower Degree of Deflection of control Dever	rated spe rev/min 8	ced Control rod travel mm	que control Control rod travel mm
1	2	3		.Y.,	<u> </u>		-		·	
(5)										

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2 Full-to			tional- ed limitat. 3a Fuel delivery characteristics			fuel delivery	Saltel red		
Test oil tem	p. 40°C (104°F) cm³/1000 strokes	Note: changed to rev/min 3	rev/min	cm ³ /1000 strokes 5	re∨/min	cm³/ 1000 strokes 7	1	Control rod travel mm 9	
	2								

Checking values in brackets En HY

* 1 mm less control rod travel than col. 2

Testoil-ISO 4113

4. Specifications ction Pumps ② rnors

WPP 001/4MB 12,8 e

6. Edition

PE 8 P 100 A 320 LS 810

RQ 300/1150 PA 187 R (1) ROV300-1150 PA 227 R (2)

RQV350-1250 PA 251 R (3)

supersede¶0.82 company:Daimler-Benz

OM 402

188 kW (256 PS) (3)

1-8-7-2-6-3-5-4 je $45^{\circ} \pm 0.5^{\circ}$ ($\pm 0.75^{\circ}$)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection, Pump Settings

Port closing at prestroke (3,35-3,55)

mm (from BDCZy7. 8

Control rod	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
mm	cm³/100 strokes 3 (1 U. 2)	100 strokes	mm 2	cm ³ /100 strokes 3	mm 6
10,3+0,1	10,0-10,2	0,3(0,6)			n = 1230
7,5-7,	1,4-2,2	0,3(0,5)	7,8-8,0	1,5-2,1	n = 350
	mm 2 10,3+0,1	mm cm³/100 strokes 2 3 (1 U. 2) 10,3+0,1 10,0-10,2	travel cm³/100 strokes 100 strokes 2 (1 U. 2) (2) (100,3+0,1 10,0-10,2 0,3(0,6)	Control rod travel mm 2 10,3+0,1 10,0-10,2 10,3+0,1 10,0-10,2 10,0-10,2 10,0-10,0-10,1	Control rod travel mm

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

RQ..PA 187 R(1)

PRG che	d (1)	Full-load s	pint	Test spec	cifications (4)	Idle spee Setting p			cifications 5		Control rod
	Control rod travel mm	rev/min	Control red travel mm	Control red travel mm	rev/min	rev/min	rod travel	rev/min	travel mm 10	rev/min 11	travel mm 12
650	13,8-14,6	650	14,	9,3 4,0 1400	1195-1210 1235-1265 0 - 1,0	E .	7,5	100 300 405-	min.9,2 7,5-7,7 45= 2,0	_	-
	·										
	<u> </u>	1		<u> </u>	<u> </u>	ــــــــــــــــــــــــــــــــــــــ	11	95-12	10 min	<u></u>	1 mm less contr

Torque-control travel on flyweight assembly dimension a =

Speed regulation: At

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de governor C	elivery on ontrol fever pp. 40°C (104°F)	Control rod stop 3a	Fuel de⁄iiv	ery characteristics	36	Starting for Idle spee	Contrat
rev/min	cm³/-1000 strokes	rev/min	rev/min	cm ³ /-1000 strokes 5		rev/min 6	red travel cm ³ /1000 strokes / mm 7
1150	100,0-102,0 (98,0-104,0)	500	600	77,5-82,5 (75,5-84,5)		100	110,0-130,0

Checking values in brackets

7.83

BOSCH

B. Gov	ernor	Settings			RQV227	R (2)		MB	12,8	t:
Upper rated : Degree of deflection of control lever	rev/min Control rodtravel	Control rod (1a travel	Intermediate	rated spe rev/min 5		Lower rated Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 3	rev/min	mm
max. ca.62	9,3 4,0 1350	15,2-17,8 1190-1200 1260-1290 0 - 1,0	-	-	-	ca. 12 360-390	300	min.9,0 7,4-7,6		0,4-1,5 2,6-3,2 5,7-6,1 8,2

Torque control travel a = -

C. Settings for Fuel Injection Pump with Fitted Governor

Full load de Control-roo Test oil tem		Rotational-speed (2b) limitation intermediate speed	Fuel deliv	very characteristics 5a speed 5b	Starting Idle switchir		Torque-	Control rod
rev/min	cm³/1000 strokes	rev/miñ 4a	rev/min	cm³/1000 strokes	rev/min	cm ² /1000 strokes	rev/min 8	travel mm 9
1150	102,0-104,0 (100,0-106,0)	1,,,,,	600	82,0-87,0 (80,0-89,0)	100	110,0-130,0	-	-

Checking values in brackets

 ullet 1 mm less control rod travel than col. 2 $^{\prime\prime}$

Testoil-ISO 4113

B. Governor Settings

RQV..PA 251 R (3)

Upper rated s	peed			Intermediate	rated spe	ed	Lower rated	speed		Sliding sleeve travel	
Degree of deflection	rev/min Control rod travel mm	rev/min	(1a) (2a)	Degree of deflection of control lever	rev/min	Control rod travel mm 4	Degree of deflection of control tever	rev/min	Control rod travel	rev/min	mm 11
max. Ca.66	1250 9,9 4,7 1500	15,2-1 1280-17 1350-17 0 -	290		-	-	ca.20	100 350	min.8,5 6,9-7,1 770 = 2,0	1285	8,3

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-rod Test oil tem		intermediate speed	Fuel deliv	rery characteristics (5a)	Starting Idle switchin	fuel delivery 6	Torque-	Control rod
rev/min	cm³/1000 strokes	rev/min 3	rev/min	cm ³ /1000 strokes 5	rev/min 6	7	8 Lev/Liviu	mm 9
1230	101,0-103,0 (99,0-105,0)	1280-1290*	1230	78,0-80,0 (76,0-82,0) **		110-130,0 16.0-22.0 e-over point 70 (80-290)	-	-
** Adi	usted at the	inner lever o	the	reduced-deliv	ery s	top		

.Checking values in brackets

2.1 mm less control rod travel than col. 2

Festoil-ISO 4113

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 MB 12,8 g

2. Edition

PE 8 P 100 A 320 LS 810

RQ 750 PA 374 R

supersedes 1.78

RQ 900 PA 310 R

company: Daimler-Benz

engine:

OM 402

8 - 7 - 2 - 6 - 3 - 5 - 4 - 10 - 45-90-135-180-225-270-315° (±0,75°)

138 kW (187PS)

All test specifications are valid for Boach Fuel Injection Pump Test Benches and Testers

108 kW (147PS)

A. Fuel Injection Pump Settings

Port closing at prestroke

3.40-3.50

mm (from BDC)

Zy1. 8

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery m. PA374 cm³/100 strokes 3	Difference cm³/ 100 strokes 4	Control rod travel mm 2	Fuel delivery m. PA310 cm³/100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
700	11,0+0,	1 9,6 - 9,8	0,3 (0,6)	11,0	9,7 - 9,9	n = 850
350	7,8-8,0	1,7-2,3	0,3 (0,7)	+0,1 7,4-7,6	1,7 - 2,3	n = 300

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

RQ.. PA374R

Upper rea	d speed			Intermediate	rated spe	eed		Lower rated	speed			Slidine s	save travel
Degrae of		Control rod	②	Degree of deflection		Control (od	Degree of deflection	•	Control r	od		①
of control	rod trave	mm rav/min	(29)	of control lever	rev/min	mm	4	of control	rev/min	mm	(3)	rev/min	mm .
1	2	3	_	4	5	6		7	6	9	. —	10	10
ca.2	4 10,0	I .		-	-	-		-	_	-		750	3,8
	850	0 - 1										-	-
									<u> </u>				
						<u> </u>		③		. <u>.</u>			

Torque control travel a

WILL

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load of Control-re Test oil te		Rotational-speed (2b) limitation intermediate speed				fuel delivery 6	Torque- travel	control 5
rev/min	cm³/1000 strokes	rev/min 49	rev/min	cm ³ /1000 strokes		cm³/1000 strokes	rev/min	travel mm
<u> </u>	2	3	4	5	[8	7	8	9
700	96,0 - 98,0 (94,0 - 100,0)	750-755 *			100	130,0-150,0 (126,0-154,0)	
								·
								./.

Checking values in brackets

* 1 mm less control rod travel than col. 2

B. Governor Settings

Upper rated s	peed			Intermed _* ate	rated spe	ed		Lower rated	speed			Sliding sl	levati eves
Degree of	rev/min	Control rod travel	(a)	Degree of deflection of control		Control r		Degree of deflection of control lever	tea/wiu	Contro travel	_	rev/min	mm (1)
lever	mm 2	ten/tuiti	(28)	lever 4	rev/min	6	<u> </u>	7	в	9		10	11
ca.36	10,0	905-9		-	-		•	-	-		-	900	5,6
	4,3 1050	935-9 0 -	45 1							'		-	-
]
	Ì							(30)					

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Control·roc	Il-load delivery introl-rod stop st oil temp. 40°C (104°F) 2.		Rutational-speed (2b)	Fuel deliv	peed 50	idle switchin		travel	Control cod
rev/min	cm ³ /1000 strokes		rev/min 48	rev/min	cm ³ /1000 strokes 5	rev/min	cm ² /1000 strokes 7	rev/min 8	mm 9
850	97,0 ·· 9 (95,0 - 10		905-910 *			100	110 - 130		
						conti	ease up to 4. mol-rod trave ersion 4 (6)		

Checking values in brackets

* 1 mm less control rod travel than col 2

B. Governor Settings

Upper rated :	speed			Intermediate	rated spe	ed	Lower rated	speed		Stiding s	leeve travel
Degree of deflection of control lever	rev/min Control rod travel	Control rod travel mm rev/min	(28)	Degree of deflection of control lever		travel	Degree of deflection of control lever	rev/min	travel mm 3) rev/min	1
1	2	3	\cup	4	5	6	7	8	9	10	11
				·							
1	1					Ì	3				<u> </u>

C. Settings for Fuel Injection Pump with Fitted Governor

Control-red	ull-load delivery ontrol-rod stop est oil temp. 40°C (104°F) Rotation limitation intermed		Fuel deliv	peed Sb	Starting Idle switching	fuel delivery 6 ng point	travel	Control cod
rev/min	cm³/1000 strokes	rev/min	rev/min	cm ³ /1000 strokes 5	rev/min 6	7	rev/min	mm 9
<u>'</u>				·				
						·		

Checking values in brackets

* 1 mm less control rod travel than col. 2

Test Specifications Fuel Injection Pumps and Governors

WPP 001/4 MB 12,8 n 3. Edition

PE 8 P 100 A 320 LS 819

RSV 350-1250 P0/822

supersedes 8 .81

company: Daimler-Benz

8 - 7 - 2 - 6 - 3 - 5 - 4 - 1 je $45^{\circ} \pm 0.5^{\circ} (\pm 0.75^{\circ})$

OM 402

Komb.-Nr. 0 401 878 107

165 kW (224 PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

mm (from BDC) 7V1 8

Port closking at bias	WUNG	(3,35-3,55)		Lyl. o		
Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm	cm ³ /100 strokes	cm³/ 100 strokes	mm	cm ³ /400 strokes	mm
1	2	3	4	2	3	6
1230	9,6-9,7	8,7 - 8,9	0,3(0,6			
350	7,5-7,7	2,1 - 2,5	0,3(0,5			
1	1	1	l .	4	l .	1

Adjust the fuel delivery from each outlet according to the values in (

B. Governor Settings

Degree of deflection	rated speed	Control rod	Intermediate Degree of deflection	rated spe	ed Control rod travel	4 Lower Degree of deflection of control	rated spe	Control rod travel	3 Tor	que control Control rod travel
of control lever	rev/min 2	mm 3	of control lever	rev/min 5	mm 6	lever	rev/min 8	mm 9	rev/min 10	mm 11
loose	800	0,3-1,0	-	-	-	ca.31	350	7,6		9,6+0,
,	x =	,5					** 450-	5 10 = 2.0	050	9,9+0,2 10,3+0,2
5 ^{ca.58}	8,6 4,0 1400	1270-1280 1330-1345 0.3 - 1								

** Set idle-speed auxiliary spring at 2 mm control-rod travel The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2 Full-to	oad stop	6 Rotational- speed limitat.		ni delivery tracteristics	Starting Idle	fuel delivery	(5a) Idle stop		
Test oil tem rev/min 1	p. 40°C (104°F) cm³/1000 strokes 2	Note: changed to rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm³/1000 strokes	rev/min 8	Control rod travel mm 9	
1230	87,0-89,0 (85,0-91,0)	1270-1280*	800	84,0-88,0 (82,0-90,0)	100	110 - 130	-	_	

Checking values in brackets

* 1 mm less control rod travel than col. 2

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 MB 16,0 g 3. Edition

En

PE 10 P 100 A 320 LS 821

ROV 350-1250 PA 378R (1) ROV 350-1000 PA 384R (2) companDaimler-Benz engine: OM 403

$$10 - 9 - 4 - 1 - 8 - 7 - 6 - 3 - 5 - 2$$

 $0 - 45 - 72 - 117 - 144 - 189 - 216 - 261 - 288 - 333$
 $^{+}0,50(0,75^{\circ})$

(1 - 311 PS) (2 - 270 PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at pres		,40-3,50 35-3 55)	mm (from BDC)		Zv1. 10	
Rolational speed rev/rein 1	Control rod	Fuel delivery (1) cm ³ /100 strokes 3	Difference cm³/ 100 strokes 4	Control rod travel mm 2	Fuel delivery (2) cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1230	10,8+0,1	9,9 - 10,1	0,3(0,6)	10,5	9,1-9,3	n 980
				(+0,1)		
350	7,8-8,0	1,4 - 2,0	0,3(0,5)	7,4-7,6	1,4 - 2,0	

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

RQV ...378 R (1)

Upper rated s	peed							Lower rated speed				Sliding sleeve trave	
deflection	rev/min Control rod trave	QSA6I /	ノ	Degree of deflection of control		Contro travel	bork	Degree of deflection of control		Control travel	rod		0
	JUU	rev/min			rev/min	mm	•	lever	rev/min	mm	્(૩)		mm
1	2	3		4	5	6		7	8	9		10	11
max.	1250	15,2-17	,8		- '		-	ca.14	100 350	min. 7,8-	9 ,4 7 , 9	300 1275	0,2-0,8 8,3
ca. 66	9,8 4,0 1500	1290-13 1360-13 0 - 1	90					420-54	0				

Torque control travel a =

ww

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-ros Test oil ten	d stop	Rotational-speed 20 limitation intermediate speed	Fuel delin high idle s	ery characteristics (5e) peed (5b)	Starting Idle switchir	. •	Torque- travel	Control rod
rev/min	cm ³ /1000 strokes .	rev/min 49	rev/min	cm³/1000 strokes 5	rev/min	cm³/1000 strokes	rev/min 8	travel mm
1230	99,0-101,0 (97,0-103,0		1230	75,0-77,0** (73,0-79,0)		120-140 (116-144) -270 (80-290)	•	-

Checking values in brackets

* 1 mm less control rod travel than col. 2

** Set at the reduced-delivery stop.

7.83

BOSCH

Upper rated :	speed			Intermediale	rated spe	eed		Lower rated				Sliding sl	eeve travel
Degree of deflection of control lever	rev/min Control rodtravel	Control rod travel mm rev/min		Degree of deflection of control lever	rev/min	Control re travel	\sim	Degree of deflection of control tover		Control r travel mm	يا العالم	rev/min	mm 11
1 .	2	3		4	5	6		 ' -	-	1			
max.	1000	15,2-1	7,8	-	_	-		ca.20	100	min.		300	0,4-1,4
					ļ				350 660	'6,8- -720=2		1025	8,3
	1 2 5	4005 4	040						900	0 -	1		
ca.64	9,5	1025-1			i	1		Į.	i			-	-
ļ	İ	1110-1	140	Ì	1	İ		350-43	ል			1	
l.	1250	0 - 1	0.1	1	1				···			<u> </u>	<u> L</u>

Torque control travel a =

mπ

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-roo Test oil tem	elivery d stop np. 40°C (104°F) (2)	Rotational-speed (2b) timitation intermediate speed	Fuel deliv high idle s	ery characteristics (5a) peod (5b)	Starting Idle switchir	\mathbf{O}	travel	Control ro
rev/miin	,	rev/min 49	rev/min	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	travel mmi
980	91,0 - 93,0 (89,0 - 95,0	1			100	120 - 140		
	(89,0 - 93,0				350	14,0 - 20,0	1	
			1125 Streu	3,4-3,6mmRW g.max.4,0(6,0)100-	 -270 (80-290)		

Checking values in brackets

* 1 mm less control rod travel than col 2

B. Governor Settings

Upper rated speed				Intermediate rated speed			Lower rated	speed	Sliding s	Sliding sleeve travel	
Degree of deflection of control tever	rev/min Control rod travel	Control rod travel mm rev/min	(1a) (2a)	Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	control rod travel mm 3	rev/min	(1) mm
1	2	3		4	5	6	 7	8	9	1.0	
					1			1		-	
İ				į					1		
					1			1			Ì
		}		ļ				İ		1	į.
		1			1	1	3	•		1	

Torque control travel a =

mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F) 2		intermediate speed	Fuel deliv	peed (50)	Idle switching	\sim	Torque- travel	Control roc
rev/min	cm ³ /1000 strokes	rev/min 4a)	rev/min 4	cm ³ /1000 strokes	rev/min 6	7	rev/min 8	mm 9
	•							
						1		

Checking values in brackets
En ////

* 1 mm less control rod travel than col. 2

WPP 001/4 MB 19,1 d 1

1. Edition

PE 12 P 110 A 320 LS 830 Z RQ 750 PA 374 R

Komb.-Nr. 0 401 840 051

company: Daimler-Benz

OM 404 A engine

312 kW (424 PS)

1 - 5- 9 -8- 3 - 4 - 11- 10 - 2 - 6 -7 - 12

0 -15-60-75-120-135-180-195-240-255-300-315° ±0,5°(±0,75°)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

(3.15-3.35)

mm (from BDC) Zy1. 12;

RW = 9,0-12,0 mm

Rotational speed rev/min	Control rod travel mm	Fuel delivery cm ³ /100 strokes 3	Difference cm³/ 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
700	14,0+0	1 15,6-15,8	0,4(0,8	2		
300	7,7-7	9 1,3-1,8	0,4(0,7)		

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Checking of slider PRIS check Control rod travel rev/min 1	\odot	Full-load s Setting po rev/min 3		Test spec Control red travel	_	 coint Control red travel	Test spe	cifications 5 Control rod travel mm	rev/min	Control rod (3)
		•	-	13,0 5,4 850	785-795		-	-	-	

Torque-control travel on flyweight assembly dimension a =

750-755 min⁻' Speed regulation: At

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de governor de Test oil ten	elivery on control lever np. 40°C (104°F)	Control rod stop Gain Fuel delivery characteristics			Starting fuel delivery Idle speed		
rev/min	cm ³ /-1000 strokes	rev/min 3	rev/min	cm³/-1000 strokes 5	rev/min 6	nd travel cm³/1000 strokes∲mm 7	
700	156,0-158,0 (153,0-161,0)	-	-	-	100	145,0-165,0	

Checking values in brackets

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 MB 19,1 m1 3. Edition

E۵

PE 12 P 110 A 320 LS 832

RGV350-1150 PA 493 R

12.82 supersedes imler-Benz company 404 A angine:386 kW (525 PS)

Komb.-Nr. 0 401 840 067

1 - 5-9- 8 - 3 - 4 - 11- 10- 2 - 6 - 7 - 12

0 -15-60-75-120-135-180-195-240-255-300-315° $\pm 0,5$ °($\pm 0,75$ °)

All test specifications are valid for Boach Fuel Injection Pump Test Benches and Testers

A. Fuel injection Pump Settings

Zv1.12:

RW = 9,0-12,0 mm

Port closing at pres	stroke	(3,15,3,35)	mm (from BDC)			
Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm³/ 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ² /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1130	13,1+0,1	14,0-14,2	0,4 (0,8)			
350	7,5-7,7	1,8- 2,4	0,4(0,7)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated a	peed			Intermediate	rated sp	eed		Lower rated	speed		Sliding	Sliding steeve travel	
deflection	rev/min Control	(LEAS)		Degree of deflection of control		Contr travel		Degree of deflection		Control rod travel	Silding	1	
	rod travel	rev/min (lever	rev/min	mm	(4)	of control lever	rev/min	mm (3) rev/min	mm	
1	2	3		4	5	6		7	8	9	10	11	
max.	1150	15,2-17,	8	•	-		•	ca.18	100	min.8,	6 300	1,4-1,6	
ca.66	12.1	1185-119	5							7,0-7,		3,6-3,9	
	4,0	1295-132	5		•			ļ	690-	750= 2,		5,1-5,4	
	1450	0 - 1,	0					1			1150	7,9	
					ŀ			_					
								3					

Torque control travel a =

mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load di Control-roi Test oil ten		Rotational-speed 20 limitation intermediate speed	Fuel delivery characteristics 5a Shigh idle speed 5b			fuel delivery 6	Torque- travel	control 5
rev/min	cm³/1000 strokes .	rev/min 4	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	travel mm
1	2	3	4	5	6	7	8	9
LDA 1130	0,7 bar 140,0-142,0 (137,0-145,0		LDA 500 LDA 1130 **	0 bar 121,0-123,0 (118,0-126,0 0,7 bar 99,0-103,0 (96,0-106,0)	į	130,0-150,0 (126,0-154,0		

Checking values in brackets

1 mm less control rod travel than col. 2

Test at n =

500

rev/min increasing pressure - in bar gauge pressure

MB 19,1 m 1

Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure = bar	Gauge pressure • bar	mm (1) .
PE 12 P. LS 832 + PA 493 R	0,7	0 0,4 0,33	13,1-13,2 12,3-12,4 12,9-13,0 12,5-12,7

Notes

(1) when n =

rev/min and gauge pressure =

bar (= maximum full-load control rod travel)

** Adjusted at the inner lever of the reduced-delivery stop

0

Test Specifications Fuel Injection Pumps (1) and Governors

WPP 001/4 MAN 20,9 e

en 3. Edition

estoil-ISO 4113

PE 12 P 110 A 520 LS838

RQ 750 PA392R (1) RO 900 PA404R (2) supersedes 2.81 MAN

engine.

(1) Nr. 7020 (283kW) 385 PS

12 - 1 - 5 - 9 - 8 - 3 - 4 - 11 - 10 - 2 - 6 - 70 - 45 - 60 - 105 - 120 - 165 - 180 - 225 - 240 - 285 - 300 - 345° - 0,5°

(2) Nr.7060 (335kW) 455 PS

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

(2,95-3,15) mm (from BOCZyl. 12

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery m. 392R (1) cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery m. 404R (2) cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
700	11,3-11,	14,7 - 14,9	0,4(0,8)	11,4-11,	5 15,4 - 15,6	n = 850
250	7,4-7,6	1,1 - 1,7	0,4(0,7)	3,8-4,0	1,4 - 2,0	n = 250
				<u> </u>		

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

RQ.. 392R (1)

Upper rated	peed	······································	Intermediate	rated sp	eed	& ower rated	speed		Sliding s	leeve travel
Degree of deflection of control lever	Control rod travel	Oontrol rod travel mm rev/min 21	Degree of deflection of control lever	rev/min S	Control rod travel mm 4	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 3	rev/min	0
ca. 30	10,3	750-755							750	5,3
	7,2	770-780						•		
						3				

Torque control travel a =

mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load d Control-ro Test oil ter		Rotational-speed (20) limitation intermediate speed			Starting Idle switchir	. •	Torque-control (travel	
rev/min	cm²/1000 strokes	rev/min 40	rev/min	cm ³ /1000 strokes	rev/min	cm³/1000 strokes	rev/min	travel mm
1	2	3	4	5	8	7	8	9
700	147,0-149,0 (139,0-152,0)					7,2 mm RW ug.max.6(9)		

Chucking values in brackets

* 1 mm less control rod travel than col. 2

Upper rated	speed	•		Intermediate	rated spe	ed		Lower rated	speed			Sìiding si	eeve travel
Degree of deflection	rev/min Control	travel		Degree of deflection		Control ro	od _	Degree of deflection of control		Control roo	\sim		0
of control	rodtravel	rev/min	(28)	of control lever	rev/min	mm	•	lever	ten/wiu	mm	(3)	tev/min	mm
,	2	3		4	5	6		7	8	9		10	,11
-	10,4	900-905		-	-		-	-	-	-			, .
	5,0	931-941											
	1000	0 - 1,	0					(3a)					

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-roo Test oil ten	1 stop	Rotational-speed (2b) limitation intermediate speed	Fuel delivingh idle s	rery characteristics 5a speed 5b	Starting to the switching switching to the switching switching to the switching switch	\mathbf{C}	travel	Control roc
rev/min	_	rev/min 48	rev/min	cm³/1000 strokes 5	rev/min	cm ² /1000 strakes 7	rev/min 8	travel mm
850	154,0-156,0 (151,0-159,0)	900-905*	-	-	-		-	-

Checking values in brackets

* 1 mm less control rod travel than col. 2

B. Governor Settings

Upper rated	speed			Intermediate	rated spe	ed	Lower rated	speed		Sliding s	leeve travel
Degree of deflection of control	rev/min Control rod travel		(a)	Degree of deflection of control		Control rod	Degree of deflection of control lever	rev/min	control rod travel	rev/min	mm (1)
lever	mm 2	rev/min 3	(28)	lever 4	rev/min 5	6	7	8	9	10	11
<u>'</u>	-								1	l	
		1							İ		
		ļ									
					į .		39				<u> </u>

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F) 2		Rotational-speed (2b) timitation intermediate speed	Fuel deliv	peed (50)	Starting Idle switchin	fuel delivery 6 ng point	travel	Control cod
rev/min	cm³/1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min 6	7 -	rev/min 8	mm 9
<u>. 1</u>	2		-					
					_			
		i e						

Checking values in brackets

* 1 mm less control rod travel than cot. 2

①

estoil-ISO 4113

Test Specifications Fuel Injection Pumps 1 001/4 voi 10,0 b 4 and Governors

2. Edition

PE 6 P 100A320 RS 100 W RS 100 X ROV 250-1100 PA 232/2R (1) RQV 250-1100 PA 232/2R (2) supersedalO.80 compan Volvo TD 100 A

Port-closing test with/without ROBO diagram Special instructions on the reverse side.

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

2.60-2.70

mm (from BDC)

Rotational speed		Fuel delivery	Difference	Control rod	Fuel delivery	Spring pre-tensioning
rev/min	travel mm	cm³/100 strokes 3	cm³/ 100 strokes 4	mm 2	cm³/100 strokes 3	(torque-control valve) mm 6
1000	12,0	12,7 - 13,4	0,5			2,5 [±] 0,1** (max.2,2-2,9)
600	9 12 15	6,1-7,3 11,3-12,7 16,5-18,2				(
200	9	4,2-5,2				

Adjust the fuel delivery from each outlet according to the values in:

** In the case of greater dispersion alter the delivery-valve spring pre-tension

B. Governor Settings

RQV... 232/2 R

Upper rated s	peed			Intermediate	rated sp	pud	Lower rated	speed		Sliding s	leave travel
	Control rod travel	Control rod travel mm rev/min		Degree of deflection of control lever	rev/min 5	Control rod travel mm 4	Degree of deflection of control lever	rev/min 8	Control rod travel mm 3	rev/min	mm 11
max.	1100	15,2-1	7,8				ca.12	250	min. 7,6 5,9-6,1		
ca. 47	12,0 4,0 1350	1230-1					3	320-3	380 =2,0		

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-rod Test oil ten		Rotational-speed 2b limitation intermediate spend	Fuel deliv high idle s	rery characteristics (5a)	Starting Idle switchin		Torque-control 5 travel Control ro	
rev/min	cm³/1000 strokes	rev/min 4a	rev/min cm³/1000 strokes		rev/min	cm ³ /1000 strokes	rev/min	
1	2	3	4 .	5	8	7	8	9
(1) LDA 700	0,6 bar 145,0-148,0 (143,0-150,0)	1140-1150*	(1) LDA 700	0 bar 114,0-119,0 (112,0-121,0	250	240]1 - 15 sion max.2,5		,
(2) 10A 700	0,4 bar 153,0-156,0 (151,0-158,0)		(2) LDA 700	0 bar 115,0-118,0 (113,0-120,0		151011		

Checking values in brackets

* 1 mm less control rod travel than col. 2

VOL 10,0 b 4

řestatn =

500

rev/min decreasing pressure - in bar gauge pressure

Pump/governor	Setting	Measurement	diminution Control rod travet- difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1) .
100 W + 232/2R	0,32 - 0,36	0,12 - 0,18	
100 X + 232/2R	0,38 - 0,41	0,16 - 0,22	

Notes

(1) when n =

rev/min and gauge pressure =

Test Specifications Fuel Injection Pumps (A) and Governors

WPP 001/4 MB 10,6a 3. Edition

estoil-ISO 4113

PE 6 P 100 A 320 LS 841 Komb.-Nr. O 401 876 243

RSV 650-1150 P. 1/820 R

supersede \$1.80

companyDaimler-Benz

engine OM 401 150 kW (204 PS)

6 - 3 - 5 - 2 - 4 - 10 -45 -120-165-240-285° $\pm 0.5^{\circ}$ ($\pm 0.75^{\circ}$)

All test specifications are valid for Bosch Fuel Injection Fump Test Benches and Testers

A. Fuel Injection Pump Settings (3,15-3,25) Port closing at prestroke 3,20-3,30 mm

mm (from BD@yl. 6; RW=9,0 - 12,0 mm

Rotational speed	Control rod	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm 2	cm ¹ /100 strokes	cm ³ / 100 strokes	mm 2	cm ³ /100 strokes	mm 6
1130	12,7+0,1	11,9 - 12,1	0,3(0,6)	<u> </u>	3	
1130	12,710,1					-
650	6,1-6,3	0,8 - 1,3	0,3(0,5)			
1	1	İ		İ		

Adjust the fuel delivery from each outlet according to the values in ** | Set auxiliary idle spring at 2.0 mm control-rod travel.

B. Governor Settings

1 Uppe	r rated speed	rev/min	Interme	ediate rati	ed speed	4	Lower	rated speed	11 3 1	rqu e c ontrol
Degree of	Control rod	Control rod travel		1		Control-		Control rod travel		Control rod travel
deflection of control	mm	mm rev/min		j	İ	deflection in degrees	rev/min	mm	rev/min	mm.
lever 1	2	3	4	5	6	7	8	9	10	11
loose	800	0,3-1,0				ca.32	650	6,2 **	1130	12,7-12,8
10036	9	- 4,0				·	660-71	5 = 2,0	600	12,7-12,9
ca.58	1195-	1170 =11,7 1210 = 5,1 0,3 - 1,7								

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

(2b) Fu	II-load stop	Rotational- speed limitat	(3a) Fu	iel delivery paracteristics	Starting fi	uel delivery (5)	4a Idle stop		
Test oil to rev/min 1	emp. 40°C (104°F) cm ³ /1000 strokes 2	Note: changed to) rev/min 3	rev/min	cm ³ /1000 strokes 5	rev/min	cm³/1000 strokes		Control rod travel mm	
1130	119,0 - 121,0 (117,0 - 123,0)	1160-1170*	-	•	100	110 - 130	-	-	

Checking values in brackets

* 1 mm less control rod travel than col. 2

H19

Testoil-ISO 4113

Test Specifications Fuel Injection Pumps 1 and Governors

WPP 001/4 MAC 11,0 k

1. Edition

PES 6 P 110 A 720 RS3024

RQV 300/600-1050 PA342KR

supersedes

PES 6 P 110 A720/3RS3036

PA344KR RQV 300/600-1050 PA365KR

company:

PA366KR

Mack ETA 676 B engine (306 PS)

 $PLE-Ma\beta = 0,740"-0,820"$

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Rotational speed rev/min		Euel delivery cm ³ /100 strokes	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1000	14,3+0,1	22,1-22,3	0,4		·	
300	5,0-5,2	1,2-2,3	0,4			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated	speed			Intermediate	rated spe	eed	Lower rated	speed		Sliding s	leeve travel
Degree of deflection of control	rev/min Control rod travel		(b)	Degree of deflection of control lever		Control rod travel	Degree of deflection of control lever	rev/min	Control rod travel	rev/min	(1)
lever 1	mm 2	rev/min 3	9	4		mm (4) 6	7	8	8	10	11
ca.68	1070 1150 1200 1280	15,5-18 6,0-11 0 - 6 0		-	•	-	ca.19	250 300 400 580 700 830	9,8-11,3 7,5- 8,5 2,5- 5,0 2,5- 5,0 0,8- 2,0	300 400 900 1070	0,6-1,8 -600 = 3,1-3,6 5,8-6,2 8,2

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load d Control-ro Test oil ter		Rotational-speed (2b) Fuel delivery characteristics (5a high idle speed (5b) intermediate speed			Starting idle switchir		Torque- travel	Control Control rod
rev/min	cm³/1000 strokes	rev/min (4)		cm ³ /1000 strokes	rev/min 6	cm ³ /1000 strokes	rev/min 8	mm 9
LDA 1000	1,7 bar 221,0-223,0	1090-1100*	LDA 800 500 LDA 600 300	1,7 bar 223,5-226,5 235,5-238,5 0 bar 143,0-146,0 114 -122 (PLE)	100 300 dispe	ca.11,5mmRW ca. 5 mmRW rsion max. 4	1050 900 700 600 500	14,4 14,4 14,7 15,2 14,9

Itabareich KH. Kundendienat. Kfz-Ausrüstung. »bert Bosch GmbH, D-7 Bluttgart Σ. Postfach 50. Printed in the Federal Republic of Germany •an République Faderale d'Allemagne par Robert Cosc⁺∍ G.hbH.

Checking values in brackate

* 1 mm less control rod travel than col. 2

MAC 11,0 k - 2 -

Testatn =

600

rev/min increasing pressure - in bar gauge pressure

Pump/governor		Setting Gauge pressure = bar		Control rod travel	diminution difference
		Gauge pressure			
S 3024 mit 30 und 30 S 3036 mit 30 und 3	44KR 65KR	0,4	1,08-1,09		
	* * * * * * * * * * * * * * * * * * * *				

Notes

(1) when n =

rev/min and gauge pressure =

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 Vol.12,0c

6. Ausgabe

PE 6 P 120 A 320 RS 3032 RS 3032Y

RQV 250-1100PA355/2R 250-1100 supersedes 79 company: Volvo engine: TD 120 C

Testing with T nozzles and fuel lines 8 x 2 x 1000 according to ..W 400/305

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Rotational speed	Control rod travel mm 2	Fuel delivery 3032 cm ³ /100 strokes 3	Difference cm³/ 100 strokes 4	Control rod travel mm 2	Fuel delivery 3032Y cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
700	12,0-12,1	21,8 - 22,1	0,4(0,8)	11,4-11,5	20, 1 - 20, 4	2,5+ 0,1**
250	5,3-5,5	0,9 - 1,3	0,3(0,6)	5,3-5,5	0,9 - 1,3	(max.2,2-2,9)
230	3,3 3,3					

B. Governor Settings

Upper rated s	peed	•	Intermediate	rated sp	so d	Lower rated	speed	1	Sliding s	leeve travel
Degree of deflection of control		Control rod travel mm rev/min 20	Degree of deflection of control lever	rev/min 5	Control rod travel mm 4	Degree of deflection of control lever 7	rev/min	Control rod travel mm 3	rev/min	(1) mm 11
max.	1100	15,2-17,8	-	-	•	ca.10	Į.	mind.6,9	I .	1,4-2,0
ca. 45	11,0 4,0 1320	1140-1150 1225-1255 0 - 1,0	1				250 300-	5,3-5,5 360=2,0	650 1170	3,7-4,0 8,3
						3a				<u> </u>

Torque control travel a = ___ m

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F) (2)		rod stop Ilmitation		ery characteristics (5a)	Starting idle switchir	. 0	Torque- travel	Control (5) Control root
rev/min		rev/min 4	rev/min	cm³/1000 strokes	rev/min	cm³/1000 strokes 7	rev/min 8	mm 9
LDA 700	0,9 bar 218,0-221,0 (215,0-224,0)	1140-1150*	LDA 700	0 bar 148;0~152,0 (145,0-155,0)	250	410,0-460,0 9 - 13 ** ion max.3(6)	-	-
700	201,0-204,0 (198,0-207,0)	1140-1150*	700	148,0-152,0 (145,0-155,0)		l		

Checking values in brackets

* 1 mm less control rod travel than col. 2

7.83

H22

BOSCH

Test at n = 500 rev/min decreasing pressure - in bar gauge pressure XXXXXX

Pump/governor	Setting	Measurement	diminution Control rod travet- difference
	Gauge pressure ≈ bar	Gauge p∉essure ≖ bar	mm (1) .
3032 + 355/2R	0,90	0,55 0,14 0	12,0 - 12,1 11,4 - 11,5 9,2 - 9,4 9,1 - 9,2
3032 Y + 355/28	0,49	0,14	11,1 - 11,2 9,2 - 9,3

Notes.

(1) when n =

rev/min and gauge pressure =

Test Specifications Fuel Injection Pumps (A) and Governors

40

WPP 001/4 VOL 12.0 g 2

1. Edition

En

PE 6 P 120 A 320 RS 3075

RSV 650-750 P 4/421

supersedes

company Volvo

engine TID 120 FG

Komb.-Nr. 0 401 876 718

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump, Settings

Port closing at prestroke

Testoil-ISO 4113

(2.55-2.75)

mm (from BDC)

Rotational	Control rod	Fuel delivery	Difference	Control rod	Fuel delivery	Spring pre-tensioning (torque-control valve)
speed rev/min	mm 2	cm³/100 strokes	cm³/ 100 strokes 4	mm 2	cm ³ /100 strokes 3	mm 6
700	11,8+0,1	24,4-24,6	0,5(0,9)			2,5 [±] 0,1
650	4,0-4,2	2,2-2,6	0,5(0,7)			(2,2-2,9)

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

	r rated speed Control rod travel mm	Control rod travel mm rev/min	Interme	diate rated	speed 6	Control- lever deflection in degrees 7		rated speed Control rod travel mm	I I	rque control Control rod travel mm
loose,	800	0,3-1,7	-	-	-	ca.33	675	6.1	-	-
	x =	2.25]				675	6,0-6,2		
ca.37	4,0	750-755 775-785 0,3-1,7					660-70	0 = 2,0		

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

127	H-load stop emp 40°C (104°F) cm ³ /1000 strokes	Rotational- speed limitat Note: changed to) rev/min 3	16.326.31	el delivery aractenstics cm ³ /1000 strokes 5	Starting fi Idle rev/min 6	cm ³ /1000 strokes		Control rod travel mm
700	244,0-246,0 (241,0-249,0)	750-755*	-	-	-	-	-	-

Checking values in brackets

* 1 mm less control rod travel than col. 2

7.83

BOSCH

WPP 001/4 SAU 12,0 d 2. Edition

En

PES 6 P 120 A 420 LS 3049 RQ 300/1000 PA 423 DR 1-4-2-6-3-5 je 60° $\stackrel{+}{=}0,5^{\circ}$ ($\stackrel{+}{=}0,75^{\circ}$) Values only apply to test nozzle-and-holder assembly 1 688 901 019 and ruel-injection test tubing 1 680 750 067.

company: Saurer engine: D 4 KT 225 kW

Komb.-Nr. 0 402 046 716

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection, Pump Settings

Port closing at prestroke

(3,15-3,35)

mm (from BDC)

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Di irence cm³/ 100 strokes	Control vod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1000	10.7+0.	1 20.0-20.4	0,5(0,8)]
300	4,4-4,6	1,9-2,5	0,8(1,2)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Control rod Control rod	Checking PRG che	g of slider	Full-load : Setting po	•	ldle speed regulation Test specifications 4 Setting point Test specifications 5					Torqua control		
		travel	rav/min 3	rod travel	rod travel		rev/min 7	nod travel mm		travel mm		travel mm
	700	15,6-16,4	700	16,0	4,0	1090-1120	300	4,5	300	4,4-4,6	700 800	11,8-11,9 11,6-11,8

Torque-control travel on flyweight assembly dimension a =

mm

Speed regulation: At

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

	elivery on ontrol lever	Control rod stop 3a	Fuel delive	ery characteristics	Starting to	uel delivery d Control
rev/min	cm ³ /-1000 strokes 2	rev/min 3	rev/min 4	cm ³ /-1000 strokes 5	rev/min 6	canno cm ³ /1000 strokes / mm 7
LDA 1000	1,2 bar 200,0-204,0 (197,0-207,0)	-	LDA 700 LDA 400	1,2 bar 215,0-219,0 (212,0-222,0) 0 bar 102,0-106,0 (99,0-109,0)	100	215,0-235,0 =13,5-13,7 mm RW

Checking values in brackets

7.83

BOSCH

SAU 12,0 d -2-

Test at n =

500

rev/min decreasing pressure - in bar gauge pressure

Pump/governor Setting Gauge pressure = bar Gauge pressure = bar Gauge pressure = bar PES 6 P. LS3049 +RQPA 423 DR 1,2 0 8,4-8,5 10,9-11,0 9,2-9,3	300			
PES 6 PLS3049 +RQPA 423 DR 1,2 0 8,4-8,5 10,9-11,0 0,25 9,2-9,3	Pump/governor	Setting	Measurement	Control rod travel-
+RQPA 423 DR 0,45 0,45 10,9-11,0 0,25 9,2-9,3		Gauge pressure ≠ bar	Gauge pressure = bar	mm (1)
	+RQPA 423 DR		0,45	8,4- 8,5 10,9-11,0

Notes:

(1) when n =

rev/min and gauge pressure =

Test Specifications Fuei Injection Pumps 1 PP 001/4 VOL 12,0 d 2 and Governors

2. Edition

PE 6 P 120 A 320 RS 3050 Komb.-Nr. 0 401 846 751

travei

Port closing at prestroke

Rotational speed

rev/min

ROV 250-1025 PA 611

supersedes 82 companyolvo engine: TD 120 FC

Values only apply to test nozzle-and-holder assembly 1 688 901 019 and fuel-injection test tubing 1 680 750 067.

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

2,4 - 2,5 mm (from 8DC) bei RW 9.0 - 12.0 mm Control rod travel Spring pra-tensioning (torque-control valve) Fuel delivery Difference Fuel delivery Control rod cm3/ cm3/100 strokes 100 strokes Cmi*/100 8trone2

 $2,5 \stackrel{+}{=} 0,1$ (2,2 - 2,9)ú,5(0,9) 700 13,0+0,1 23,7 - 24,0 2,2 - 2,6 0,5(0,7)

250 3.8-4.0

Adjust the fuel delivery from each puties according to the values in [

B. Governor Settings

Upper rated s	peed			Intermediate	rated spe					speed	l	Sliding sl	eeve travel
defiection	Control rod travel	Control rod travel mm rev/min	(1) (2)	Degree of deflection of control lever	rev/min	Control rod travel		Degree deflect of con lever	tion	rev/min	Control rod travel mm 3	rev/min	mm 11 .
1	2	3		4	5	6	-+			<u> </u>	-		
max.	1080	15,2-17	8	-	-	-		ca.	8	100 250	min.5,3 3,8-4,0	200 475	0,6-0,9 3,9-4,5
ca.64	12,0 4,0 1300	1085-109 1150-118 0 - 1	95 80 ,0					3		300-3	360 = 2,0	670- 940 1025	6,4-6,6 7,5

Torque control travel a =

mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-red Test oil ten			ery characteristics (5a)	Starting Idle switchir	•	Torque-	Control rod	
rav/min		rev/min 49	rev/min	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1 000 strokes 7	rev/min 8	travel mm 9
LDA 700	1,2 bar 237,5-239,5 (234,5-242,5)	1085-1095*	LDA 700	0 bar 142,0-144,0 (139,0-147,0	100	20,0-21,0 man RW	•	-

Checking values in brackets

* 1 mm less control rod travel than col. 2

7.83

Testoil-150 4113

rev/min increasing pressure - in bar gauge pressure Test at n =

Testoil-ISO 4113

500	increasing *		VOL 12,0 d 2 -2
Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1) .
PESPRS 30/50		1,20	13,0 - 13,1
withPA 611			9,2 - 9,3
	0,67		12,2 - 12,3
		0,3	10,5 - 10,7
		·	

Notes:

(1) when n =

rev/min and gauge pressure =

Test Specifications Fuel Injection Pumps 1 and Governors

WPP 001/4 FIA 13,8 i 3. Edition

PE 6 P 120 A 720 RS 3069 Komb.-Nr. 0 401 846 728

0

Testoil-ISO 4113

ROV 300-1000 PA 501

supersede3.82 company:Fiat

Values only apply to test nozzle-and-holder assembly 1 688 901 019 and fuel-injection test tubing 1 680 750 067.

engine: 8210.22.269

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

3,5-3,6 (3,45-3,65) Port closing at prestroke mm (from BDC) RW = 9.0 - 12.0 mm

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1000	12,3+0,	1 19,6-19,9	0,5(0,9			
300	6,0-6,	2 1,5-2,1	0,8 (1,2			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper ruled s	peed			Intermediate	rated sp	eed		Lower rated	speed			Sliding s	leeve travel
	rev/min Control	Control rod (Degree of deflection		Control rod travel		Degree of deflection		Control ro	d		\odot
	rod travel mm	mm rev/min (of control lever	rev/min	mm (4	, ı	of control lever	rev/min	пт	(3)	rev/min	mm
1	2	3		4	5	6		7	8	9		10	11
max.	1045	15,2-17	,8	-	-	-		ca.10	100	min.7	,6	250	0,2-0,5
ca.65	11,3	1040-10	J50				ı		300	6,0-6	,2	500	2,9-3,5
	4.0		145				- 1]			750	5,1-5,4
	1250						ı	350-45	5			1000	7,6
1												•	
Į								3					
L	L			<u> </u>		<u> </u>						<u> </u>	

Torque control travel a =

C. Settings for Fue! Injection Pump with Fitted Governor

Full-load de Control-roe Test oil ten		Rotational-speed (2b) limitation intermediate speed	Fuel deliv high i⊴e s	very characteristics (50)	Starting Idle switchin	. •	Torque- travel	control 5 Control rod
rev/min	cm³/1000 strokes .	rev/min 4a	rev/min	cm ³ /1000 strokes	tek/min	cm ³ /1000 strokes	rev/min	travel mm
LDA 1000	0,7 bar 196,0-199,0 (193,0-202,0	1040 - 1050	LDA 1000	0 bar 146,0-149,0 (143,0-152,0	100	175,0-195,0	-	-

Checking values in brackets

* 1 mm less control rod travel than cos. 2

F1A 13,8 i

-2-

Testatn =

500

rev/min decreasing pressure - in bar gauge pressure increasing

Pump/governor	Setting	Measurement	diminution Control rod (vave)- difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1) .
PE 6 PRS 3069 + RQVPA 501	0,42	0,70 0 0,35	11,5-11,6 12,3-12,4 9,4-9,5 10,1-10,5

Notes

(1) when n =

rev/min and gauge pressure =

bar (= maximum full-load control rod travel)

J6

Testoil-ISO 4113

Test Specifications Fuel Injection Pumps 2 and Governors

WPP 001/4 FIA 13,8 h 4. Edition

PE 6 P 120 A 720 RS 3069

RO 300/1000 PA 502

supersedes 3,82

Komb.-Nr. 0 401 846 729

company: Fiat 8210.22.373

Values only apply to test nozzle-and-holder assembly 1 688 901 019 and fuel-injection test tubing 1 680 750 067.

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

mm (from BOCRW=9,0-12,0 mm

Rotational speed rev/min	Control rod travel mm 2	Fuel delive ry cm ³ /100 strokes 3	Difference cm³/ 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ⁹ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 8
1000 390	12,3+0,1 6,0-6,2	19,6-19,9 1,5-2,1	0,5(0,9) 0,8(1,2)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Checkin	g of slider	Full-load s	•	-	cifications (4)	Idle spec	-		cifications (5)	Torque o	control 3
rev/min 1	Control rod travel mm	rev/min 3	Control rod travel mm 4	Control red travel rnm 5	rev/min	rev/min 7	Control rod travel	rev/min 9	Control rod travel	rev/min 11	Control rod travel
650 VH=	19,2-20,8 max. 46°	650	20,0		1045-1060 1130-1160 0 - 1,0		6,1		min.7,6 6,0-6,2 105=2,0		12,0-12,1 12,0-12,2
Torque-c	control travel		<u></u>	<u> </u>		<u> </u>	<u> </u>	1045-	 1060 min ⁻¹		1 mm less contro

Torque-control travel on flyweight assembly dimension a =

Speed regulation: At

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

	elivery on control lever np. 40°C (104°F)	Control rod stop 3a	Fuel delive	ary characteristics 3b	Starting fi Idle spee	d Contrel
rev/min 1	cm ³ /-1000 strokes	rev/min 3	rev/min	cm ³ /-1000 strokes	rev/min 6	cm ³ /1000 strokes / mm 7
LDA 1000	0,7 bar 196,0-199,0 (193,0-202,0)	-	LDA 1000	0 bar 146,0-149,0 (143,0-152,0)	100	175,0-195,0

Checking values in brackets

FIA 13,8 h

-2-

Test at n =

500

rev/min increasing pressure - in bar gauge pressure

Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1) .
PE 6 P RS 3069 +RQPA 502	0,42	0,70 0 0,35	11,5-11,6 12,3-12,4 9,4- 9,5 10,1-10,5

Notes

(1) when n =

rev/min and gauge pressure =

bar (= maximum full-load control rod travel)

18

0

Test Specifications Fuel Injection Pumps 1 and Governors

WPP 001/4 RVI 12,0 a 5. Edition

ROV 250-1100 PA 495 PES 6 P 120 A 320 RS 3070 Values only apply to test nozzle-and-holder assembly 1 688 901 019 and fuel-injection test tubing 1 680 750 067.

supersedes 1.83 company: RVI

MIDR 063540 engine:

223 kW (304 PS)

Komb.-Nr. 0 402 046 719

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

mm (from BDC) = RW 9,0 - 12,0 mm 3,50-3,60 Port closing at prestroke Spring pre-tensioning (torque-control valve) Control rod Fuel delivery Difference Fuel delivery Rotational speed | Control rod cm³/ cm³/100 strokes 100 strokes mm cm³/100 strokes ത്ത rev/min 6 0,5(0,8)19,4 - 19,712,9-13,0 1100 1,5 - 2,3 0,8(1,2)

Adjust the fuel delivery from each outlet according to the values in Mark for start of pump delivery on tester body 12° after start of B. Governor Settings

5,2-5,4

250

Upper rated s	peed		Intermediate	rated ap	eed		Lower rated	speed	1	Sliding at	seve travel
Degree of deflection	rev <i>ir</i> nin	Control rod travel mm rev/min 2a	Degree of deflection of control lever	rev/min	Control retravel	od ①	Degree of deflection of control lever 7	rav/min 8	Control rod travei mm 3	rev/min 10	mm 11
max.	1100 1400	15,2-17,8 0 - 1	-	-	-		ca.12	100 250	min.6,8 5,2-5,4	200 500 850	0,3-0,6 3,0-3,2 5,0-5,2
ca. 66	11,9	1160-1170 1235-1265					290-400 3e			1150	8,4

Torque control travel a =

mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-rec Test oil ten	,,, o. 3	Rotational-speed 20 limitation intermediate speed	Fuel deliv high idle s		Starting in the switchi		frave;	Control (5) Control rot travel
rev/min	_	rev/min 49	rev/min	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	mm 9
LDA 1100	0,7 bar 194,0-197,0 (191,0-200,0)	1160-1170	LDA 1100	0 bar 151,0-154,0 (148,0-157,0)	1	130,0-165,0		
		•		·	100-	170 (80-190)		

Checking values in brackets

1 mm less control rod travel than col. 2

RVI 12,0 a - 2 -

Testat n ≠

500

rev/min decreasing pressure – in bar gauge pressure

Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1) .
PES 6 PRS 3070	0,27		12,2 - 12,3
+ RQVPA 495		0,70	12,9 - 13,0
		0	10,6 - 10,7
		0,22	11,2 - 11,4
			·

Notes

(1) when n =

rev/min and gauge pressure =

Test Specifications ① Fuel Injection Pumps 1 and Governors

WPP 001/4 VOL 12,0 f 2. Edition

PE 6 P 120 A 320 RS 3071

ROV 250-1100 PA 371/2 R

supersette80 compa#OlvO engine TD 120 G

Komb.-Nr. 0 401 846 725

Values only apply to test nozzle-and-holder assembly 1 688 901 019 and fuel-injection test

tubing 1 680 750 067.
All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Rotational speed	Control rod travel	Fuel delivery	Difference cm ³ /	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min 1	mm 2	cm ³ /100 strokes 3	100 strokes	mm 2	cm ³ /100 strokes 3	mm 6
700	1,4+0,1	20,5-20,8	0,5(0,9)			a sta 4
250	5,6-5,7	2,2-2,6	0,5(0,7)			2,5 [±] 0,1 (2,2-2,9)

Adjust the fuel delivery from each outlet according to the values in _______ In the case of greater dispersion after the delivery-valve spring pre-tension ** accordingly.

B. Governor Settings

Upper rated s	peed			Intermediate	rated spe	ed		Lower rated	speed	1	Stiding s	eeve travel
deflection of control	Control rod travel	Control rod travel mm rev/min	(19) (28)	Degree of deflection of control lever	rev/min	Control rod travel mm	0	Degree of deflection of control lever	rev/min	Control rod travel mm 3	rev/min	mm 11
max.	1100	15,2-17	,8	-	-	-		a. 12	100 250	min.7,1 5,6-5,7	200 (500 2	,7-0,9 2,9-3,2
ca. 46	10,4 4,0 1350	1160-11 1235-12 0 - 1,	265					275 - 400			800 1100	7,7
			, –					3 a				

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load d Control-ro Test oil ter		Rotational-speed (2b) limitation intermediate speed	Fuel deliv high idle s	rery characteristics (5a)	Starting Idle switchir	. •	Torque- travel	Control rod
rev/min	cm³/1000 strokes	rev/min 4	rev/min	cm³/1000 strokes	rev/min	cm³/1000 strokes	rev/min	travel mm
1	2	з	4	5	6	7	8	9
LDA 700	0,9 bar 205,0-208,0 (202,0-211,0)	1160-1170 *	LDA 700	0 bar 157,0-161,0 (154,0-164,0		230,0-270,0 = 20,0-21,0 mm RW	-	a.

Checking values in brackets

• 1 mm less control rod travel than col. 2

Test at n =

500

rev/min decreasing pressure - in bar gauge pressure

V

VOL 12,0 f - 2

Setting	Measurement	diminution Control rod travel-
Gauge pressure = bar	Gauge pressure = bar	difference mm (1)
0,57	0,90 0 0,33	11,0-11,1 11,4-11,5 9,0-9,1 9,9-10,1
	Gauge pressure ≃ bar 0,57	Gauge pressure = bar Gauge pressure = bar 0,57 0,90 0 0,33

Notes

(1) when n =

revimin and gauge pressure =

Test Specifications Fuel Injection Pumps (A) and Governors

40

WPP 001/4 VOL 12.0 g 1

1. Edition

En

PE 6 P 120 A 320 RS 3075

Komb.-Nr. 0 401 876 730

RSV 200-1000 P 4/421

supersedes

company Volvo

engine

TID 120 F/PP

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

Testoil-ISO 4113

(2.55-2.75)

mm (from BDC)

Spring pre-tensioning (torque-control valve) mm
2,5 ⁺ 0,1
(2,2-2,9)

Adjust the fuel delivery from each outlet according to the values in E

B. Governor Settings

Degree of deflection of control lever	r rated speed Control rod travel mm	rev/min Contro! rod travei mm rev/min 3	interme	diate rated	speed	Control- laver deflection in degrees 7		rated speed Control rod travel mm		rque control Control rod Iravel mm
loose .	800 x =	0,3-1,7 4,0	-	•	-	ca.20	200 200 2 65-32	5,5 5,9-6,1 5 = 2,0	-	-
ca.58	10,3 4,0 1230	1040-1050 1065-1095 0,3-1,7								

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

ピツ	il-load stop	6 Rotational- speed limitat		el delivery aractenstics	Starting f	uel delivery 5	43 Idle	stop Control rod
	emp. 40°C (104°F) cm ² /1000 strokes 2	Note: changed to) rev/min 3	rev/min	cm³/1000 strokes 5	rev/min 6	cm³/;000 strokes 7	rev/min 8	travel mm 9
700	235,5-238,5 (2 32,5-241,5)	1040-1050*	-	-	-	-	-	-

Checking values in brackets

* 1 mm less control rod travel than cot. 2

7.83

BOSCH

estoil-ISO 4113

Test Specifications Fuel Injection Pumps and Governors

40

WPP 001/4 MB 11,4 i 3 2. Edition

PES 6 P 120 A 820 LS 3077

RQ 300/1100 PA 603

Values only apply to test nozzle-and-holder assembly 1 688 901 019 and fuel-injection test tubing 1 680 750 067.

supersede8.81
Daimler-Benz
company OM 407 HA
engine 206 kW (280 PS)
Komb.-Nr. O 402 046 727

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

(3.95-4.15)

mm (from BDC) Zy1. 6

Rotational speed	Control rod travel	Fuel delivery	Difference cm ³ / 100 strokes	Control rod travel	Fuel delivery cm ³ /100 strokes	Spring pre-tensioning (torque-control valve)
1	2	3	4	2	3	6
1100	11.7+0.	18,4 - 18,6	0,5(0,9)			
300	5,0-5,2	1,4- 2,0	0,8(1,2)			
				1		

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Checkin	g of slider	Full load	speed re	gulation		idle spee	ed regula	ition		Torque o	control
rev/min 1 650	Control rod	Setting por rev/min 3	Control rod travel mm	rev/min 5 10 ,7 4,0	Control rod travel mm 6 1145-1160 1190-1220	rev/min 7	Control rod travel	rev/min 9	min. 6,5	rev/min 11 1100 950	Control rod travel mm 12 11,7 + 0,1 12,0 + 0,2
VH =	max. 46			1260	0 - 1			355-	395 = 2,0	600	12,3 + 0,1

Torque-control travel on flyweight assembly dimension a =

mm

Speed regulation At - 1160 min⁻¹

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

	control lever	Control rod stop	Fuel deliv	very characteristics	Starting f	Starting fuel delivery		
Test oil tei rev/min 1	mp. 40°C (104°F) cm³/~1000 strokes 2	rev/min	rev/min	cm ³ /~1000 strokes 5	rev/min	cm ³ /100 strokes 7		
LDA 1100	0,75 bar 184,0 - 186,0 (181,0 - 189,0)		LDA 600 LDA 500	0,75 bar 187,0 - 193,0 (184,0 -196,0) 0 bar 145,0 - 147,0 (142,0 - 150,0)	100	175,0 - 195,0 (171,0-199,0)		

Checking values in brackets

7.83

BOSCH

Testain =

500

rev/min decreasing pressure - in bar gauge pressure

MB 11,4 i 3

-2-

Testoil-ISO 4113

Pump/governor	Setting	Measurement	diminution Control rod travel difference
	Gauge pressure bar	Gauge pressure = bar	mm (1)
LS 3077 with	0,75		12,3 - 12,4
PA 603		0,53	11,7 - 11,8
		0,42	10,8 - 11,0
		0	10,3 - 10,4

Notes

(1) when n =

rev/min and gauge pressure =

Test Specifications Fuel Injection Pumps and Governors

WPP 001/4 ROL 12,2 a 3. Edition

PE 6 P 130 A 320 RS 3078 RQ 750 PA 584 1 - 4 - 2 - 6 - 3 - 5 je 60° ±0,5° (±0,75°) Values only apply to test nozzle-and-holder assembly 1 688 901 019 and fuel-injection test tubing 1 680 750 067.

company Rolls Royce C 6 . 200 G

Komb.-Nr. 0 401 846 744

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

mm (from BDC) (3.35-3.55)Port closing at prestroke

		3,33-3,337		T	T	
Rotational speed	Control rod travel	Fuel delivery	Difference cm ³ /	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm	cm ³ /100 strokes	100 strokes	mm	cm³/100 strokes	mm
1	2	3	4	2	3	6
700	11,7+0,	26,7 - 27,1	0.5(0.9)			•
700	11,770,	2 2011 2111				
300	4,9-5,0	3,8 - 4,4	0,8(1,2)			
	1	1				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Checking	g of slider	Full-load	speed re	gulation		Idle spec	ed regula	ation		Torque o	ontrol
Setting po		oint	Test spec	cifications	Setting point Test spec			st specifications			
rev/min 1	Control rod travel mm 2	rev/min	Control rod travel rmm	rev/min 5	Control rod travel mm 6	rev/min	Control rod travel mm 8	1	Control rod travel mm 10	rev/min	Control rod travel mm 12
	-	-	-	10,7 4,0 850		-	-	-	-	-	-

Torque-control travel on flyweight assembly dimension a =

Speed regulation At

1 mm less control

C. Settings for Fuel Injection Pump with Fitted Governor

governor	elivery on control lever	Control rod stop	Fuel deliv	ery characteristics	Starting f	Starting fuel delivery		
Test oil ter rev/min 1	np 40°C (104°F) cm³/-1000 strokes	rev/min 3	rev/min	cm ³ /-1000 strokes 5	rev/min	cm³/100 strokes 7		
700	267,0 - 271,0 (264,0 - 274,0)	•	-	-	100	290,0-340,0		
	·							

Checking values in brackets

Test Specifications Fuel Injection Pumps and Governors

WPP 001/4 KHD 9,6 b

2. Edition

FW

PES 6 P 110 A 720 RS 3079

RSV 300-1150 P 8/486

A 486

supersede9.82 company KHD

engine: F 6 L 413 FRC 199 kW (271 PS)

bei 2300 min

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

Fuel delivery

cm³/100 strokes

A. Fuel Injection Pump Settings

Control rod

14,2+0,1

7,2-7,3

travel

Port closing at prestroke

Rotational speed

rev/min

1150

300

estoil-ISO 4113

(2.75-2.95)

17,7 - 18,1

mm (from BDC) EW = 9,0 = 12,0 mm

 Difference	Control rod	Fael delivery	Spring pre-tensioning (torque-control valve)
cm³/ 100 strokes 4	mm 2	cm ³ /100 strokes	mm 6
 0,4 (0,8			
 0 4 (0.7			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

	rated speed		Intermediate	rated spe		\ _'	r rated spe	ed Control rod	3 Tar	que control Control rod
Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel	Degree of deflection of control lever		travel	rev/ເຕົາດ 10	travel mm
1	2	3	4	5	16	1	18	9		
loose	800	0,3-1,0	-	-	•	ca. 13	300	6,7	1150 350	14,2+0, 15,4+0,
	Х =	-,,,					300	7,2-7,3 360 = 2,0	550	14,2+0,
ca. 48	13,2 4,0 1390	1190-1200 1220-1250 0,3 - 1,7					300-	360 = 2,0		

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2 Full-to	ad stop	6 Rotational- speed limitat.		el delivery tracteristics	Starting Idle	fuel delivery	(Sa) Idle	stop
Test oil temp rev/min	1	Note: changed to rev/min 3	rev/min	cm ³ /1000 strokes 5	rev/min	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm 9
LDA 1150	0,9 bar 177,0-181,0 (174,0-184,0)	1190-1200*	LDA 800 LDA 500	0,9 bar 175,0-179,0 (172,0-182,0 0 bar 123,0-125,0 (120,0-128,0)		190,0-210,		

Checking values in brackets

* 1 mm less control rod travel than col. 2

Test atn =

550

rev/min decreasing pressure - in bar gauge pressure

Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1) .
PES6PRS3079 mit P8/486 A 486	0,9	0 0,57 0,30	14,2 - 14,3 11,9 - 12,0 13,8 - 13,9 12,4 - 12,8
	•		

Notes

(1) when n =

rev/min and gauge pressure =

Test Specifications Fuel Injection Pumps and Governors

WPP 001/4 RVI 12,0 b 2. Edition

En

Testoil-ISO 4113

PES 6 P 120 A 320 RS 3082 Komb.-Nr. 0 402 046 723

RQ 750 PA 597

Values only apply to test nozzle-and-holder assembly 1 688 901 019 and fuel-injection test tubing 1 680 750 067.

RVI company MIDS (R) 063540 engine

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings 3,5 - 3,6 Port closing at prestroke (3,45-3,65)

mm (from BDC)

Rotational speed	···	Fuel delivery		Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm 2	cm³/100 strokes	cm³/ 100 strokes 4	mm 2	cm ³ /100 strokes 3	mm .
700	14,8+0,	25,1 - 25,3	0,5(0,9)			1
250	6,5-6,7	1,50 - 2,10	0,8(1,2)			
- -						

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Checking	g of slider	Full-load s			cifications	idle spec	oint		cifications	Torque	control Control rod
rev/min	Control roc travel mm 2	rev/min	Control rod travel mm	rev/min 5	Control rod travel mm 6	rev/min 7	Control red travel mm 8	rev/min 9	Control rod travel mm 10	rev/min	travel mm 12
•	-	-	-	13,8 4,0 900	750-755 787-800 0 - 1,0	-	-	-	-	-	-

Torque-control travel on flyweight assembly dimension a =

Speed regulation At

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load d	elivery on control lever np. 40°C (104°F)	Control rod stop	Fuel deliv	ery characteristics	Starting f	uel delivery
rev/min 1	cm ³ /-1000 strokes	rev/min 3	rev/min	cm ³ /-1000 strokes 5	rev/min	cm³/100 strokes 7
700	251, 0 - 253, 0 (248, 0 - 256, 0)	-	-	-	-	-

Checking values in brackets

Test Specifications Fuel Injection Pumps (A) and Governors

40

WPP 001/4 PEN 12,0 d 2. Edition

En

PE 6 P 120 A 320 RS 3088 Z

RSV 200-900 P4/421 R

supersedes 12.82 company Volvo-Penta

Values only apply to test nozzle-and-holder assembly 1 688 901 019 and fuel-injection test tubing 1 680 750 067.

engine TMD 120 B Komb.-Nr. O 401 876 725

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

2,6 - 2,7

Port closing at prestroke

Testoil-ISO 4113

(2,55-2,75) mm (from BOC)

Rotational	Commonitor	Fuel delivery	Difference	Control rod	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm 2	cm ³ /100 strokes	cm ³ / 100 strokes 4	mm 2	cm³/100 strokes	mm 6
700	11,7+0,1	19,3-19,7	0,5 (0,9)			2,5 [±] 0,1 (2,2-2,9
250	3,6-3,8	1,6-2,0	0,5 (0,8)			(2,2 3)
	1					~

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

	rated speed Control rod travel mm		Intermed	diate rated	speed	Control- lever deflection in degrees 7		rated speed Control rod travel mm	12 J	rque control Control rod travel mm 11
loose,	800 X =	0,3-1,7 4,0	-	-	-	ca.22	250 250	3,2 3,6-3,8	-	-
ca.53	10,7 4,0 1130	940- 950 970-1000 0,3-1,7					300-3	60 = 2,0		

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

(20)	it toad stop	Rotational- speed limitat	11.37	nel delivery paracteristics	Starting (uel delivery 5	48) Idi	e stop Control rod
Test oil to	emp. 40°C (104°F) cm³/1000 strokes	changed to) rev/min 3	rev/min	cm ³ /1000 strokes 5	rev/min	cm³/1000 strokes 7	sev/min	travel mm 9
700	193,0-197,0 (191,0-199,0)	940-950*	900	193,0-197,0 (190,0-200,0)	100	390-440 = 20,0- 21,0 mmRW	250	3,7

Checking values in brackets

* 1 mm less control rod travel than col. 2

8.83

BOSCH

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Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 BAO 31,8 a
1. Edition

En.

PE 12 P 130 A 120 RS 3094-1 RQV 400-750 PA 632 supersedes

1 - 12-9-4-5-8-11-2-3-10-7-6
0-45-60-105-120-165-180-225-240-285-300-3450+0,50(+0,750) Raudouin

Values only apply to test nozzle-and-holder Komb.-Nr. 0 401 830 704 assembly 1 688 901 019 and fuel-injection test tubing 1 680 750 067.

Altest specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

restoil-ISO 4113

A. Fuel injection Pump Settings

Rotational speed	Control rod travel	Fuel delivery cm ³ /100 strokes	Difference cm ³ / 100 strokes	Control rod travel	Fuel delivery cm ³ /100 strokes	Spring pre-tensioning (torque-control valve) mm
1	2	3	4	2	3	6
700	11,4+0,1	30,6-31,0	0,5(0,9)			
400	3,5-3,	2,1-2,7	0,8(1,2)			
					Ì	
	ł			ļ		İ

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

obber reres sh	er rated speed Interine				irried abi	esd	Lower rated	speed	Stiding sleeve trav			
deflection of control of		Control rod travel mm sev/min	(9) (28)	Degree of deflection of control lever	rev/min 5	Control rod travel mm 4	Degree of deflection of control (ever	rev/min 8	Control rod travel mm 3 9	rev/min	1) num 11	
ca. 24		750-755 780-790 0 -1,0		-	-	-	ca. 6	40Q	min.5,1 3,5-3,7 750= 2,0	375 450- 650 750	0,5-0,7 2,0 - 2,1 4,3	

Torque control travel a 😇

mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-ros Test oil ten		Rotational-speed 20 limitation intermediate speed	Fuel deliv	rery characteristics 50 peed 50	Starting Idle switching	. •	Torque-control 5 travel Control roo	
rev/min	cm³/1000 strokes	rev/min 4	rev/min	cm³/1000 strokes	ř e v/min	cm ³ /1000 strokes	rev/min	travel mm
1	2	3	4	5	6	7	8	9
700	306,0-310,0 (303,0-313,0)		-	•	400	21,0-27,0 (18,0-30,0)	-	-

Checking values in brackets

* 1 mm less control rod travel than col. 2

Testoil-ISO 4113

Test Specifications Fuel Injection Pumps and Governors

WPP 001/4 MB 11,4 o

3. Edition

PES 6 P 120 A 820 LS 3095

RSV 350-750 P1/487

Values only apply to test nozzle-and-holder assembly 1 688 901 019 and fuel-injection test tubing 1 680 750 067.

supersedes 82

company Daimler-Benz

engine: OM 407 A

169 kW (230 PS)

Komb.-Nr. 0 402 076 717

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

-m (from BD/Zv] - 6: RW=9.0 - 12.0 mm

ort closing at pres	goke ((3,95-4,15)	mm (from BDC)		Fuel delivery	Spring pre-tensioning
Rotational speed	Control rod	Fuet delivery	Difference	Control rod travel	1 001 01	(torque-control valve)
rev/min	mm 2	cm ³ /100 strokes	cm ³ / 100 strokes 4	ოო 2	cm³/100 strokes 3	mm 6
730	12,4+0,	19,6 - 19.8	0,5(0,8)			
350	5,7-5,9	3,0 - 4,0	0,8(0,7)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper Degree of deflection of control lever	rated speed rev/min 2	Control rod travel mm	Intermediate Degree of deflection of control lever	rated spe rev/min 5	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm		que control Control rod travel mm
loose	700 x =	0,3-1,0	-	-	-	-	-	-	-	-
ca. 33	3 11,4 4,0 900	750-755 785-795 0,3-1,7								

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2 Full-load stop		6 Rotational- speed limitat.	delivery tracteristics	Starting I	fuel delivery	(5a) Idle stop		
Test oil temp rev/min 1	cm ³ /1000 strokes	Note: changed to rev/min 3	rev/min	cm³/1000 strokes 5	rev/min 6	cm³/1000 strokes 7	rev/min 8	travel mm
730	196,0-198,0 (193,0-201,0)	745-760 *	-	•	100	170,0-190,0	-	-
								travel then o

Checking values in brackets

* 1 mm less control rod travel than col. 2

Test Specifications Fuel Injection Pumps 1 WPP 001/4 STE 9,7 a and Governors

PE 6 P 110 A 721 RS 3102 Komb.-Nr. 0 401 856 702

RQV 250-1200 PA 257-1

superseded 1.82 company: Steyr

engine: WD 615.84

180 kW (245 PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testera

A. Fuel Injection Pump Settings

Port closing at pres	stroke	2,8-2,9	mm (from BDC)	RW = 9	0-12.0 mm	
Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rav/min 1	mm 2	cm ³ /100 strokes 3	100 strokes 4	mm 2	cm ³ /100 strokes	mm 6
1200	12,6+0,	1 15,1-15,3	0,4(0,8)			
250	7,0-7,2	1,3-1,7	0,4(0,7)			
		·				
	1				<u> </u>	

Adjust the fuel delivery from each outlet according to the values in [

B. Governor Settings

deflection Co. of control roo		Control rod	\sim l	0		Intermediate rated speed Lower rated speed					
laver mn	dtrave	travel mm rev/min		Degree of deflection of control lever	rev/min	Control rod travel mm 4	Degree of deflection of control lever	rev/min 8	Control rod travel mm 3	rev/min 10	mm 11
max. 1	1230	15,2-17	7,8	•	-	-	ca.14		min. 8,5 7,0-7,2		0,7-0,9 3,7-3,9
4	11,6 4,0 1450	1240-12 1310-13 0 - 1	340				30		41Ó = 2,0	870 1200	5,3-5,7 8,1

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

	stop pp. 40°C (104°F) 2	timitation intermediate speed		high idle s	.	awitchin		Torque- travel	Control 5 Control rod travel mm
1	2	3	_	4	5	6	7	8	8
LDA 1200	0,7 bar 151,0-153,0 (148,0-156,0	1240-1250)	*	LDA 700 LDA 700	0,7 bar 147,0-151,0 (144,0-154,0) 0 bar 99,0-103,0 (96,0-106,0)		210,0-240,0	-	-

Checking values in brackets

* 1 mm less control rod travel than col. 2

8.83

Testoil-ISO 4113

STE 9,7 a - 2 -

Test at n =

500

rev/min decreasing pressure - in bar gauge pressure

300			
Pump/governor	Setting	Measurement	diminution Control rod travet- difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1) .
PE 6 PRS 3102 + RQVPA257-1	0,70	0 0,46 0,33	12,6-12,7 10,2-10,3 12,0-12,1 10,8-11,0

Notes:

(1) when n =

gauge pressure =

Test Specifications Fuel Injection Pumps 1 and Governors

WPP 001/4 SSC 14,0 a 2. Edition

PE 12 P 100 A 520 RS 3103

RQV 375-1000 PA 639

supersedes 11 .82

Komb.-Nr. 0 401 840 708

company: SSCM

1-8-5-10-3-7-6-11-2-9-4-12

engine: Poyaud V 12-520 AN

0-15-60-75-120-135-180-195-240-255-300-315 ° ±0,5° (± 0,75°)

219 kW (298 PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

rev/min mm 1 2	n	cm ³ /100 strokes	cm³/ 100 strokes	l		
		3	4	mm 2	cm ³ /100 strokes 3	mm 6
1000 1	1,5+0,	9,3-9,5	0,3(0,6)			
375 7	,6-7,8	0,8-1,4	0,3(0,5)			

Adjust the fuel delivery from each outlet according to the values in [

B. Governor Settings

peed		Intermediate	rated sp	eed		Lower rated	speed			Slidina s	leeve travel
rev/min Control	Control rod ta	Degree of deflection		Control rod travel		Degree of deflection		Control re travel	od		1
rod travel	mm rev/min 2a	of control	rev/min	mm (1		rev/min	mm .	3	i	mm
2	3	4	5	18		7	8	9		10	11
1070	15,2-17,8	-	-	-		ca.17	100				0,8-1,1 3,5-3,8
10,5						,	3/3	/,0- /	,, 0	780 1000	5,0-5,4 7,6
1250		•				375-47)				
	rev/min Control rod travel mm 2 1070 10,5 4,0	rev/min Control rod travel rod travel mm rev/min 2a 3 1070 15 s 2-17,8 10,5 1040-1050 4,0 1085-1115	rev/min Control rod travel rod travel rev/min 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	rev/min Control rod (a) Degree of deflection of control rev/min 2a	rev/min Control rod (a) Degree of deflection of control rod travel mm rev/min 2 3 4 5 6 6 Control rod travel mm 5 6 Control rod travel mm 5 6 6 Control rod travel mm 5 6 6 Control rod travel mm 6 6 Control rod travel mm 6 6 Control rod travel mm 6 6 Control rod travel mm 6 6 Control rod travel mm 7 Control rod travel mm 7 Control rod travel mm 7 Control rod travel mm 7 Control rod travel mm 7 Control rod travel mm 7 Control rod travel mm 7 Control rod travel mm 7 Control rod travel mm 7 Control rod travel mm 7 Control rod travel mm 7 Control rod travel mm 7 Control rod travel mm 7 Control rod travel mm 7 Control rod travel mm 7 Control rod travel mm 7 Control rod travel mm 7 Control rod travel mm 7 Control rod travel mm 7 Control rod travel mm 7 Control rod rod rod rod rod rod rod rod rod rod	rev/min Control rod travel rod travel rev/min 2	rev/min Control rod travel mm rev/min 2 3 Control rod travel mm rev/min 2 3 Control rod travel mm rev/min 2 3 Control rod travel mm rev/min 5 Control rod travel mm 6 Control lever 7 Ca.17	rev/min Control travel travel rev/min 2a 3	rev/min Control travel travel rev/min 2 3 2 3 4 5 6 6 7 7 6 7 6 7 6 7 7 6 7 7 7 6 7	rev/min Control travel travel rev/min 2 3 3 4 5 Control rod travel mm rev/min 2 3 3 4 5 Control rod travel mm rev/min 2 3 3 5 Control rod travel mm rev/min 5 6 7 Control rod travel mm (3) 9 1070 15,2-17,8 Ca.17 100 min. 9,2 7,6-7,8 10,5 1040-1050 1085-1115 1250 0 - 1.0	rev/min Control rod travel mm rev/min 2 3 3 4 5 6 6 7 7 8 6 7 8 6 7 8 6 7 8 6 7 8 6 7 8 6 7 8 6 7 8 6 7 8 6 7 8 6 7 8 6 7 8 6 7 8 8 7 8 8 8 8

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-rod Test oil tem		Rotational-speed 20 limitation intermediate speed	Fuel deliv	rery characteristics 50 poeed 50	Starting Idle switchin		Torque- travel	control (5)
rev/min	cm³/1000 strokes	rev/min 4	rev/min	cm ³ /1000 strokes	rev/min	cm³/1000 strokes	rev/min	travel mm
1	2	3	4	5	6	7	8	9
1000	93,0-95,0 (91,0-97,0)	1040-1050*	-	-	100	230,0-250,0 (226,0 - 254,) - 0)	•
				·				

Checking values in brackets

* 1 mm less control rod travel than col. 2

9.83

Testoil-ISO 4113

Test Specifications Fuel Injection Pumps 2 and Governors

WPP 001/4 UNI 9,6 a 1

2. Edition

PES6P 110 A 320 RS 3105-1 Komb.-Nr. 0 402 046 737

RQ 275/1150 PA 653

supersedes 11.82

IVECO-Unic company:

8220-32 engine:

129 kW

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

mm (from BDC)

Rotational speed	Control rod travel	Fuel delivery cm ³ /100 strokes 3		Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1150	11,5+0,1	12,2-12,5	0,4(0,75			
275	5,9-6,1		0,45(0,75			
						,

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Checking PRG che		Full-load s Setting po		gulation Test spec Centrel red travel	cifications (4)		coint Centrel red travel	Test spe	cifications 5 Control rod		Control rod (3)
rev/min		rev/min 3	mm 4		rev/min 6	rev/min 7	mm 8	rev/min	mm 10	rev/min 11	12
600 VH=	19,2-20,8 max. 46°	600	20,0	10,5 4,0 1400	1195-1210 1245-1275 0 - 1,0		6,0	275	min.7,5 5,9-6,1 390= 2,0	1150 600	11,5-11,6 11,5-11,7
Yassua	Control travel		0			<u> </u>		1195-	1210 min ⁻¹		1 mm less control

Torque-control travel on flyweight assembly dimension a =

Speed regulation: At

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de governor c Test oil ten	elivery on control lever np. 40°C (104°F)	Control rod stop 3a	Fuel delive	ery characteristics	ノコレハ	Starting for Idle speed	Control
rev/min	cm³/-1000 strokes	rev/min 3	rev/min 4	cm ³ /-1000 stroke s 5		rev/min 8	red travel cm ³ /1000 strokes / mm 7
LDA 1150	0,7 bar 122,0-125,0 (119,5-127,5)	-	LDA 400	0 bar 68,0-71,0 (65,0-74,0)		100	160,0-180,0 (156,0-184,0)

Checking values in brackets

D. Adjustment Test for Manifold Pressure Compensator

UNI 9,6 a 1 - 2 -

Test at n =

rev/min decreasing pressure – in bar gauge pressure

Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1)
PES6PRS 3105-1 + RQPA 653	0,70	0 0,27 0,22	11,5-11,6 9,4- 9,5 11,0-11,1 9,7-10,1

Notes:

(1) when n =

rev/min and gauge pressure =

bar (= maximum full-load control rod travel)

Test Specifications Fuel Injection Pumps (A) and Governors

40

WPP 001/4 PEN 10,0 e

2. Edition

En

PE 6 P 110 A 320 RS 3109 Z

RSV 200-900 P 1/421

supersedes11.82

company Volvo-Penta engine TMD 100 B

177 kW (241 PS)

Komb.-Nr. 0 401 876 729

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

Testoil-ISO 4113

3,5-3,6 (3,45-3,65)

mm (from BDC)

1000000	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
mm 2	cm ¹ /100 strokes 3	cm³/ 100 strokes 4	mm 2	cm ² /100 strokes 3	mm 6
11,6+0,1	14,915,1	0,4 (0,8)			
4,2-4,4	1,7-2,1	0,3 (0,6)			
	mm 2 11,6+0,1	travel mm 2 cm³/100 strokes 3 11,6+0,1 14,915,1	cm ³ /100 strokes cm ³ /100 strokes cm ³ /100 strokes described cm ³ /100 strokes desc	Control rod travel mm 2 cm ¹ /100 strokes cm ² / 2 11,6+0,1 14,9-15,1 0,4 (0,8)	Control rod travel mm 2 cm ³ /100 strokes cm ³ /100 strokes 4 cm ³ /100 strokes 2 cm ³ /100 strokes 3 11,6+0,1 14,915,1 0,4 (0,8)

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

(1) Uppe	r rated speed			ediate rated	speed	4		rated speed	3 10	rque control
Degree of deflection of control lever	Control rod travei mm	Control rod travel mm rev/min	4	5	6	Control- lever deflection in degrees 7	rev/min 8	travel mm 9	rev/min	travel mm 11
loose .	800 x =	0,3-1,0	-	<u>-</u>	-	ca. 19	250 250	3,7-3,9 4,2-4,4	-	-
ca. 46	10,6 4,0 1140	940-950 970-1000 0,3-1,7					270-3	30=2,0		

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

(29)	II -toad stop	Rotational- speed limitat	33 Fu	el delivery jaracteristics 1	Starting f	uel delivery (5)	(4a) ^{idi}	e stop Control rod
Test oil te	cmp 40°C (104°F) cm ³ /1000 strokes	changed to) rev/min 3	rev/min 4	cm³/1000 strokes 5	rev/min	cm ³ /1000 strokes 7	rev/min 8	travel mm 9
700	149,0-151,0 (146,0-154,0)	940-950	-	-	100	20,0-21,0 mm RW	-	-
							<u> </u>	

Checking values in brackets

* 1 mm less control rod travel than col 2

BOSCH

Geschaftsbereich KH. Kundendienst. Kfz-Ausrustung. © 1980 by Robert Bosch GmbH, Postfach 50, D-7000 Stuttgart 1. Printed in the Federal Republic of Germany Imprimé en République Fédérale d'Allemagne par Robert Bcz//sh GmbH

Test Specifications Fuel Injection Pumps (A) and Governors

40

WPP 001/4 MB 11,4 q

2. Edition

En

PES 6 P 120 A 820 LS 3112

RSV 350-1 100 PQ/500

supersedes 1

company

1.83 Daimler-Beaz

Values only apply to test nozzle-and-holder assembly 1 688 901 019 and fuel-injection test tubing 1 680 750 067

engine OM 407 A

206 kW (280 PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

Komb.-Nr. 0 402 076 718

A. Fuel Injection Pump Settings

Port closing at prestroke

4,0 - 4,1 (3,95-4,15)

mm (from BDC)

Rotational speed rev/min	Control rod travel	Fuel delivery cm³/100 strokes	Difference cm³/ 100 strokes	Control rod travel mm 2	Fuel delivery cm ² /100 strokes 3	Spring pre-tensioning (forque-control valve) mm
1100	11,5+0,1	17,5-17,7	0,5 (0,9)			
350 600	4,7-4,9		0,8 (1,2)			
500	-	C. Sp. 4 u. 5	0,75(1,2)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Degree of deflection of control lever	r rated speed Control rod travel mm	rev/min Control rod travel mm rev/min	Intermed	hate rated	speed	Control- lever deflection in degrees 7		rated speed Control rod travel mm 9	1(3)	rque control Control rod travel mm
loose	800 x = 3	0,3-1,0 ,25	-	-	•	ca. 25	350 420-460	4,8		
ca. 48	10,5 4,0 1300	1135-1145 1215-1245 0,3-1,7					420-400	- 2,0		

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2b Full-load stop		6 Rotational speed limitat		uel delivery naracteristics	Starting t	duel delivery 5	4a Idle stop	
Test oil te rev/min 1	emp 40°C (104°F) cm³/1000 strokes 2	Note changed to) rev/min 3	rev/min	cm ⁹ /1000 strokes	rev/min	cm³/1000 strokes 7	rev/min 8	Control root travel mm
LDA 1100	0,7 bar 175,0-177,0 (172,0-180,0)	1135-1145*	LDA 600 LDA 500	0,7 bar 177,0-183,0 (174,0-186,0) 0 bar 143,0-145,0 (140,0-148,0)	100	150,0-170, (146,0-174,		

Checking values in brackets

* 1 mm less control rod travel than col 2

9.83

BOSCH

Geschaftsbereich KH. Kundendienst. Kfz. Ausrustung c. 1980 by Robert Bosch GmbH. Postfach 50. D-7000 Stuttgart 1. Printed in the Federal Republic of Germany Imprimé en Republique Federale d'Allemagne par Robert Bosch GmbH.

D. Adjustment Test for Manifold Pressure Compensator

-2-

∜estat n =

500

rev/min decreasing pressure - in bar gauge pressure

MB 11,4 q

Pump/governor	Setting	Measurement	diminution Control rod travel- difference
·	Gauge pressure = ber	Gauge pressure = bar	mm - (1)
PES6PLS3112	0,70		11,8 - 11,9
+ RSVP0/500		0,40	10,7 - 10,9
		0,50	11,6 - 11,7
		0	10,5 - 10,6

Notes.

(1) when n =

rev/min and gauge pressure =

bar (= maximum full-load control rod travel)

2

Test Specifications Fuel Injection Pumps ② and Governors

40

WPP 001/4 STE 12,0 b 2. Edition

En

PE 8 P 110 A 121 LS 3113 RQ 300-1100 PA 646 Komb.-Nr. O 401 853 700 1-5-4-8-6-3-7-2 je 45° + 0,5° (+ 0,75°)

supersedes 11.82

WD815.64 engine: 240 kW (326 PS)

Testoil-ISO 4113

All test specifications are valid for Bosch Fuel Injection Pump Test Senches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

(2,75-2,95)

mm (from BDC)

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference crn ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1100	12,0+0,	1 15,8-16,0	0,4(0,8)		<u> </u>	_
300	6,1-6,3	1,5-2,1	0,4(0,7)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Checking PRG che	g of slider	Full-load s	•	-	cifications (4)	ldle spec Setting p	_		cifications (5)	Torque o	(3)
rev/min	Control rod travel mm	rev/min 3	Control rod travel rn/m 4	Control rad travel rmm	rev/min	rev/min 7	Control red travel snrn 8	rev/min 9	Control rod travel mm	rev/min	Control rod travel
600	15,6-16,4	600	16,0		1135-1150 1200-1230 0 - 1,0		6,2	100 300 400	min.7,7 6,1-6,3 460=2,0	-	-
	ontrol travel							1135-	1150 min	1	1 mm less con?

Torque-control travel on flyweight assembly dimension a =

mm

Speed regulation: At

1 mm less control rod travel

9.83

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de governor co	elivery on ontrol lever up. 40°C (104°F)	Control rod stop 3a	Fuel delivery characteristics			Starting fuel delivery Idle speed		
rev/min	cm ³ /-1000 strokes	rev/min 3	rev/min	cm³/~1000 strokes 5	:	rev/min 6	cantal red travel cm ³ /1000 strokes:/ mm	
LDA 1100	0,9 bar 158,0-160,0 (155,0-163,0)	-	LDA 500	0 bar 111,0-113,0 (108,0-116,0)		100	240,0-280,0	
							,	

Checking values in brackets

D. Adjustment Test for Manifold Pressure Compensator

STE 12,0 b

. 2 -

Test	at	n	*

500

rev/min decreasing pressure - in bar gauge pressure

Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure = bar	Gauge pressure ⇒ bar	mm (1) .
PE8PLS3113 +PA646	0,55	0,90 0 0,48	11,5-11,7 12,0-12,1 9,7- 9,8 10,9-11,1

Notes:

(1) when n =

rev/min and gauge pressure = bar (= maximum full-load control rod travel)

①

Test Specifications Fuel Injection Pumps (1) and Governors

WPP 001/4 STE 12,0 b 1 2.Edition

Eπ

PE 8 P 110 A 121 LS 3113

RQV 250-1100 PA 652

supersed 3.83

Komb.-Nr. 0 401 858 701

1 - 5 - 4 - 8 - 6 - 3 - 7 - 2 je $45^{\circ} \pm 0.5^{\circ} (\pm 0.75^{\circ})$

companySteyr angine: WD 815.64 240 kW

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke (2.75-2.95) rnm (from BDC)

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm³/100 strokes 3	Difference :cm³/ :100 strukes -4	Control rod travel mm 2	Fuel delivery cm ² /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1100	12,0+0,1	15,8-16,0	0,4(0,75)			
250	6,1-6,3	1,5-2,1	0,4(0,7)	<u></u>		
			1			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated	speed		Intermediate	e rated sp	eed	Lower rated	speed		Sliding e	leeve travel
Degree of deflection of control lever	rev/min Control rod travel mm 2	Control rod travel mm rev/min 21	of control	rev#min 5	Control rod travel mm 4	Degree of deflection of control lever	rev/min 8	Control rod travel mm 3	rev/min	0
max.	1140	15,2-17,8	+	-	-	ca. 11	100 250	min.7,3 6,1-6,3	6	0,7-0,9 3,7-4,1
ca. 61	11,0 4,0 1350	1140-1150 1195-1225 0-1,0					1	75 = 2,0	1	5,4-5,7 7,9
						3				

Torque control travel a = 0,4 mm

C. Settings for Fuel Injection Fump with Fitted Governor

Full-load de Control-roe Test oil ten rev/mis		high idle s	•		Starting fuel delivery 6 Idle switching point rev/min cm³/1000 strokes		Control 5 Control rod travel mm
LDA 1100	0,9 bar 158,0-160,0 (155,0-163,0	LDA 500 LDA 500	0,9 bar 159,0-163,0 (157,0-165,0) 0 bar 111,0-113,0 (108,0-116,0)		240,0-280,0	1100 810 640 500	12,2+0

Checking values in brackets

* 1 mm less control rod travel than col. 2

D. Adjustment Test for Manifold Pressure Compensator

STE 12,0 b 1

-2-

Test at n =

rev/min increasing pressure - in bar gauge pressure

500 diminution
Control rod travel-Measurement Pump/governor Setting difference (1) bar Gauge pressure = bar mm Gauge pressure = 12,4 - 12,5 PE 8 P..LS 3113 + RQV..PA 652 0,90 9,7 - 9,8 0 11,8 - 12,0 0,60 10,8 - 11,0 0,48

Notes

(1) when n =

rev/min and gauge pressure =

bar (= maximum full-load control rod travel)

K10

Test Specifications 2 Fuel injection Pumps 2 WPP 001/4 FIA 17,2a and Governors

1. Edition

PE 8 P 120 A 920/5 LS 3801

RO 300/1200 PA 356 R

supersed##

Kob.-Nr. 0 401 848 711

company: Fiat

8280.02.405

0 401 848 703

1 - 8 - 4 - 3 - 6 - 5 - 7 - 2 je $45^{\circ} \pm 0.5^{\circ} (\pm 0.75^{\circ})$

257 kW (350 PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

Testoil-ISO 4113

mm (from BDC)

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm³/ 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1200	9,3-9,4	17,3 - 17,7	0,5 (0,9)		
300	6,7-6,9	2,8 - 3,6	0,8 (1,2)		

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Checkin PRG che		Full-load s Setting po	•	•		Idle spec	•		cifications (5)	Torque d	control (3)
rev/miń	Control rod travel mm	i I	Control rod travel rricro	Control red travel mm	rev/min	rev/min	Control rad travel mm 8	rev/min	Control rod travel mm		Control rod travel
650	15,6-16,4	650	16,0	8,3 4,0 1400	1245-1260 1280-1310 0-1,0		6,8		min. 8,3	1200 650	9,3-9,4 9,3-9,5

Torque-control travel on flyweight assembly dimension a =

Speed regulation: At

1245-1260 min -1

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

	elivery on control lever np. 40°C (104°F)	Control rod stop	Fuel deliv	ery characteristics 3b			
rev/min 1	cm ³ /-1000 strokes 2	rev/min	rev/min 4	cm ³ /-1000 strokes	rev/min 6	red travel cm ³ /1000 strokes;/ mm 7	
1200	173,0 - 177,0 (170,0 - 180,0)	-	-	-	100	19,5-21,0 mm RW	

Checking values in brackets

9.83

KAA

Test Specifications Fuel Injection Pumps 1 and Governors

WPP 001/4 FIA 17,2a1 1.Edition

PE 8 P 120 A 920/5 LS 3801

ROV 300-1200 PA 357 P.

supersedes_

company: Fiat

257 kW (350 PS)

Komb.-Nr. 0 401 848 704

1 - 8 - 4 - 3 - 6 - 5 - 7 - 2 je $45^{\circ} \stackrel{+}{=} 0,5^{\circ} (\stackrel{+}{=} 0,75^{\circ})$

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at pres	itroke	3,5 -3,6 (3.45-3.65)	mm (from BDC)			
Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm	cm ³ /100 strokes	cm³/ 100 strokes	mm 2	cm ³ /100 strokes	mm 6
1	2	3		-	-	
1200	9,3-9,4	17,3 - 17,7	0,5(0,8)			
300	6,7-6,9	2,8 - 3,6	0,8(1,2)			٤.

Adjust the fuel delivery from each outlet according to the values in [

B. Governor Settings

Upper rated s	peed			Intermediate	rated sp	ed		Lower rated	speed	1	 Sliding sl	eeve travel
0.00		Control rod	/ 18 H	Degree of deflection		Control rod travel		Degree of deflection		Control rod travel		①
of control	rod travel	tea/win		of control	rev/min	mm (4	of control lever	rev/min	mm ③	164/min	mm
1	2	3		4	5	6		7	8	9	10	11
max.	1200	15,2-17	7,8	-	•	-		ca. 10	100	min. 8,3	250	0,9-1,1
ca. 63	8,3 4,0 1450	1240-12 1310-13 0-1	340					330-430 ③		6,7-6,9	570 880 1200	4,0-4,4 5,7-5,9 8,3
L				<u> </u>					l		<u> </u>	L

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-ros		Rotational-speed 20 limitation intermediate speed	Fuel deliv	rery characteristics 50 poed 50	Starting Idle switchin		Torque- trevel	Control 5
rev/min	\mathbf{C}	rev/min 4a	rev/mគា 4	cm ³ /1000 strokes	rev/min	cm ³ /1000 \$trakes 7	rev/min 8	travel mm 9
1200	173,0-177,0 (170,0-180,0)	1	-	-	100	19,5-21,0 mm RW	•	-

Checking values in brackets

* 1 mm less control rod travel than col. 2

Testoil-ISO 4113

Test Specifications ② Fuel Injection Pumps 2 NPP 001/4 FIA 17,2a2 and Governors

PE8P120A920/5LS3801

RQ 300/1200 PA 474 R

supersedes -

Komb.-Nr. 0 401 848 713

company: Fiat

1-8-4-3-6-5-7-2 je $45^{\circ} \pm 0,5^{\circ} (\pm 0,75^{\circ})$

8280.22.001 331 kW (450 PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

mm (from BDC)

Rotational speed	travel	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm: 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1200	10,9+0,1	22,1-22,5	0,5(0,9)			
300	6,7-6,9	2,8-3,6	0,8(1,2)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Checking		Fell∃cad s Setting po	•	-	cifications (4)	Idle spec Setting p	_		cifications (5)	Torque d	(3)
nkn\var	Control rod travel mm	rev/min 3	Control red travel rnm	Central red travel rnm	rev/min	rev/min 7	Control ned travel mits 8	rev/min	Control rod travel mm	rev/min 11	Control rod travel mm
650	19,2-20,8	650	20,0	9,9	1245-1260	300	6,8	100	min. 8,3	1200	10,9-11,0
VA=	max. 46°	<u> </u>	! !	4,0	1275-1310		İ	300	6,7-6,9	650	10,9-11,1
		<u>.</u>		1400	0-1,0			390-	20=2,0		
) 									
	control travel	<u>. </u>	<u> </u>	<u> </u>	<u> </u>	L	12	 45-12	l 60 min -1	L	1 mm less contro

Torque-control travel on flyweight assembly dimension a

Speed regulation: At

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

governor	H-load delivery on vernor control lever st oil temp. 40°C (104°F)		Control rad stop	33	Fuel delivery characteristics (3)			Starting fuel delivery Idle speed		
rey/min 1	cm ³ /-1000 strokes		rev/min 3		rev/min	cm ³ /-1000 strokes 5		rev/min 6	cm ³ /1000 strokes / mm 7	
1200	221,0-225,0 (218,0-228,0)		-		-	-		100	19,5-21,0 mm RW	

Checking values in brackets

9.83

K13

Testoil-ISO 4113

Test Specifications Fuel Injection Pumps 2 and Governors

5. Edition

PE8P110A320 LS 3802

RQ 300/1150 PA 187-3 RO 300/1150 PA 187-5 supersedes 7.81

Daimler-Benz

OM 422 206 kW (280 PS)

Komb.-Nr. 0 401 848 708 1-8-7-2-6-3-5-4 je 45° $\pm 0.5^{\circ}$ ($\pm 0.75^{\circ}$)

See Service Information VDT-I-401/102

All test specifications are valid for Boach Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

mm (from 808W = 9.0-12,0 mm

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery # cm ² /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery	Spring pre-tensioning (torque-control valve) mm 6
1150 300 600	8,0-8,1		0,4(0,8) 0,4(0,7) (0,9) rottle		13,1-13,3 1,5-2,1 C, Sp. 4 u.5 * without retu	rn throttle

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

rev/min travel mm 2 3	rev/min mm 3 4 650 13,5	mm 5	rev/min	rev/min	Central red travel		cifications 5 Control rod travel		Control rod (3)
650 13,0-14,0	ह्या । १४ म	- 		.,	18	9		rev/min	mm 12
		4,0 1350	1195-1210 1235-1265 0 - 1,0		8,1	300 420-4	min.10,2 8,0-8,2 60= 2,0 max.1,8		

Torque-control travel on flyweight assembly dimension a =

Speed regulation: At

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

	elivery on control lever np. 40°C (104°F)	Control rod stop 3a	Fuel deliv	ery characteristics 3b	Starting f	Starting fuel delivery Idle speed		
rev/min 1	cm ³ /-1000 strokes 2	rev/min 3	rev/min 4	cm ³ /-1000 strokes 5	r ev /min 6	cm ³ /1000 strokesy mm		
1150 (1)	127,0-129,0 (124,0-132,0)	600	600	118,0-122,0 (115,0-125,0)	100	130,0-150,0		

Checking values in brackets

PRG che	g at slider ck Control rod	Full-load : Setting po	oint Control	Test spec		Idle spec Setting p		Test spe	cifications 5 Control rod	Torque o	Control rod
	travel	rev/min	red travel mm 4	rad travel mm 5	rev/min 6	rev/min 7	mm B	1	mm 10	rev/min	mm 12
650	13,0-14,0	650	13,5		1195-1210 1235-1265 0-1,0		8,1	300 420-4	min. 10,2 8,0-8,2 60 =2,0 max. 1,8	-	
L			<u> </u>	<u> </u>		<u> </u>	_	105-1	210 min	1	1 mm less contro

Torque-control travel on flyweight assembly dimension a =

mm

Speed regulation. At

m less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load d governor of Test oil ter	lelivery on control lever thp. 40°C (104°F)	Control rod stop 3a	Fuel deliv	/AL	Control		
rev/min	cm³/-1000 strokes	rev/min 3	rev/min	cm ³ /-1000 strokes 5	rev/min	cm ³ /1000 strokes/mm	
1150 (2)	131,0-133,0 (128,5-135,5)	600	600	112,0-116,0 (109,0-119,0)	100	130,0-150,0 (126,0-154,0)	
,							

Checking values in brackats

Testoil-ISO 4113

B. Governor Settings

PRG chei	Control rad	I	ad speed re g point Control red travel		cifications	_	idle spec Setting p		Test spe	cifications 5 Control rod travel		Control rod travel
rev/min	travel mm 2	rev/m		mm 5	rev/min 6		rev/min 7	mm 8	8 sex/min	mm 10	rev/min	mm 12
•	-											·
									Ì			
1			1		i		<u> </u>	ــــــــــــــــــــــــــــــــــــــ		<u> </u>		1 leen conte

Torque-control travel on flyweight assembly dimension a =

mm

Speed regulation: At

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

governor (telivery on control lever np. 40°C (104°F)	2	Control rod stop 3a	Fuel delive	ary characteristics	3	Starting for idle spee	d Control ray travel
rev/min	cm ³ /-1000 strokes		rev/min 3	rev/min	cm³/-1000 strokes 5		rev/min	cm ³ /1000 strokes / mm

Test Specifications Fuel Injection Pumps 2 NPP 001/4 MB 14,6 d and Governors

4. Edition

PE 8 P 110 A 320 LS 3802 Komb.-Nr. 0 401 848 714 RO 300/1150 PA 187-4

supersedes 5.81

Daimler-Benz company:

OM 422

8 - 7 - 2 - 6 - 3 - 5 - 4 - 1 je $45^{\circ} \pm 0.5^{\circ} (\pm 0.75^{\circ})$

184 kW (250 PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

mm (from BDC)Zyl. 8

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm³/100 strokes	Difference cm³/ 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1150	11,6+0,	1 10,9 - 11,1	0,4(0,8)			
300	8,3-8,5	1,1 - 1,7	0,4(0,7)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

PRG che	ck Control rod travel	Full-load s Setting po rev/min		Test spec Central red travel	(4)		coint Centrel red travel	Test spe	cifications Control rod travel mm	Torque o	Control rod (3)
650	13,2-14,0	650	13,0		1190-1205 1235 - 1265	l .	7,7	1 00			•
1350	0-1								450= 2,0		

Torque-control travel on flyweight assembly dimension a =

Speed regulation: A 190-1205 min 1

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery on governor control lever Test oil temp. 40°C (104°F)		Control rod stop	Fuel delive	ery characteristics 3b	Contra		
rev/min	cm ³ /-1000 strokes 2	rev/min 3	rev/min 4	cm³/-1000 strokes 5	rev/min 6	nd travil cm ³ /1000 strokes:/ mm 7	
1150	109,0 - 111,0 (106,0 - 114,0)	600	600	94,0 - 98,0 (91,0 - 101,0)	100	130,0-150,0	

Checking values in brackets

9.83

K16

Festoil-ISO 4113

Test Specifications Fuel Injection Pumps 2 and Governors

WPP 001/4 MB 14,6 n 1 2. Edition

PE 8 P 110 A 320 LS 3802 Komb.-Nr. 0 401 848 738

RO 900 PA 310 R

 $1 - 8 - 7 - 2 - 6 - 3 - 5 - 4 \text{ je } 45^{0} + 0.5^{0} (+0.75^{0})$

supersedes 7.81

Daimler-Benz

OM 422

180 kW (245 PS)

See Service Information VDT-I-401/102

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

(3.95-4.15)

mm (from 8D 2) 1. 8; RW = 9,0 - 12,0 mm

Rotational speed rev/min	Control rod travel	Fuel delivery # cm ³ /100 strokes 3	Difference cm³/ 100 strokes 4	Control rod travel mm 2	*	Spring pre-tensioning (torque-control valve) mm 6
850	13,9+0,	14,9-15,1	0,4(0,8)	13,9+0,1	15,2-15,4	
300	8,2-8,4	1,1-1,7	0,4(0,7)	8,2-8,4	1,4-2,0	
		*with return t	rottle		* without retur	n throttle
			<u> </u>	<u> </u>		

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

rev/min 1 2 Control rod travel mm 2 rev/min 3 4 5 6 7 8 940-950 Control rod travel mm 10 11 12 Control rod travel mm 11 12 Control rod travel mm 10 10 11 12 12 12 12 12 12 12 12 12 12 12 12	Checking PRG che	g of slider ck	\bigcirc	Full-load s Setting po			cifications (4)	Idle spec Setting p	_		cifications (5)	Torque o	(3)
	. 1	travel	O	rev/min 3	leved ber	red travel	rev/min	rev/min 7	mm mm	rev/min	mm		mm
	-	•		•	•			-	-	d'a	-	•	-

Torque-control travel on flyweight assembly dimension a =

Speed regulation: At

rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load d governor o Test oil ten	elivery on control lever np. 40°C (104°F)	Control rod stop 3a	Fuel delive	ery characteristics 3b	Starting for Idle spee	Centres
rev/min	cm ³ /-1000 strokes	rev/min 3	rev/min 4	cm ³ /~1000 strokes 5	rev/min 6	nd travel cm³/1000 strokes:∤ mm 7
(1) 850	149,0-151,0 (146,0-154,0)	-	•	•	100	130,0-150,0

Checking values in brackets

Checking of slider PRG check Control rod travel rev/min 1	Full-load speed r Setting point Control red trave rev/min 3	Test specifications 4	Idle speed regula Setting point Control red travel inm 7 8	Test specifications Control rod travel rev/inin mm 9 10	Control rod (3) rev/min 11 12
-		12,9 900-905 6,3 940-950			

Torque-control travel on flyweight assembly dimension a =

mm

Speed regulation At 900-905 min-1

mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

governor	delivery on control tever mp 40°C (104°F)	Control rod stop 3a	Fuel delive	ery characteristics	3 b	Starting fi Idle spee	Contres
rev/min	cm³/-1000 strokes	rev/min	rev/min	cm³/-1000 strokes 5		rev/min 6	cm ³ /1000 strokes / mm
(2) 850	152,0-154,0 (149,0-157,0)	-	-	-		100	140,0-160,0 ·(136,0-164,0)

Checking values in brackets

Testoil-ISO 4113

B. Governor Settings

PRG che	Control rod travel	Full-load : Setting po rev/min	Test spec Control rod travel	rev/min	Setting p	Control rod travel	Test spe	cifications 5 Control rod travel	rev/min	Control rod (3)
1	2									
										1 mm loss control

Torque-control travel on flyweight assembly dimension a =

mm

Speed regulation At

1 mm less control

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de governor c	elivery on ontrol lever p. 40°C (104°F)	Control rod stop 3a	Fuel delive	ery characteristics	Starting for Idle spee	Contro
rev/min	cm³/-1000 strokes	rev/min 3	rev/min 4	cm³/-1000 strokes 5	rev/mir	red travel crm ³ /1000 strokes / mm 7
	,					

Testoil-180 4113

Test Specifications Fuel Injection Pumps 2 and Governors

WPP 001/4 MB 14,6n2 2. Edition

PE 8 P 110 A 320 LS 3802

RO 1050 PA 310

supersedes 7.8%

Komb.-Nr. 0 401 848 739

company:

Daimler-Benz

1 - 8 - 7 - 2 - 6 - 3 - 5 - 4 je $45^{\circ} \pm 0.5^{\circ} (\pm 0.75^{\circ})$

engine

OM 422 198 kW (269 PS)

See Service Information VDT-I-401/102

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

mm (from BD 03y1. 8; RW = 9,0-12,0 mm

Rotational speed rev/min 1	travel *		Difference cm³/ 100 strokes	Control rod travel mm 2	Fuel delivery * cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm
1000	14,3+0,1	15,9-16,1	0,4(0,8)	14,3+0,1	15,9-16,1	
300	8,2-8,4	1,4-2,0	0,4(0,7)	8,2-8,4	1,4-,2,0	
		*with return t	throttle		* without retu	rn throttle

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

1	Hecking of slider RG check Setting point Test specifications							Idle speed regulation Setting point Test specifications (5)				Torque control			
rev/min	Control rod travel mm 2	•	rev/min 3	Control red travel rnm 4	Control red travel mm 5	rev/min 6	rev/min 7	Control red travel m.m 8	rev/min 9	Control rod fravel mm 10	rev/min 11	Control rod			
-	•		-	_	13,3	1050-1055 1108-1118	1	-	-	-	-	-			

Torque-control travel on flyweight assembly dimension a =

Speed regulation At 1050-1055 min

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

	elivery on ontrol lever op. 40°C (104°F)	Control rod stop (3a)	Fuel delivery characteristics			Starting for Idle spee	d Control
rev/min t	cm ³ /-1000 strokes 2	rev/min 3	rev/min 4	cm³/-1000 strokes		rev/min 6	red travel cm ³ /1000 strokes:/ mm 7
(1 u.2 1000) 159,0-161,0 (156,0-164,0)	•	-	-		(1) 100 (2) 100	130,0-150,0 140,0-160,0 (136,0-164,0)

Checking values in brackets

9.83

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Testoil-ISO 4113

WPP 001/4 MB 14,6n 3. Edizione

PE 8 P 110 A 320 LS 3802

Komb.-Nr. 0 401 848 737

 $1 - 8 - 7 - 2 - 6 - 3 - 5 - 4 \text{ je } 45^{\circ} -0.5^{\circ} (-0.75^{\circ})$

RQ 750 PA 374 R

supersedes 11.82

company: Daimler-Benz

OM 420

154 kW (209 PS)

See Service Information VDT-I-401/102

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

(3.95-4.15)

mm (from BDCZy1. 8; RW = 9,0-12,0 mm

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery # cm ³ /100 s//okes 3	Difference cm³/ 100 strokes 4	Control rod travel mm 2		Spring pre-tensioning (torque-control valve) mm 6
700	13,9+0,	14,2-14,4	0,4(0,8)	13,9+0,1	14,2-14,4	
300	8,3-8,	1,3-1,9	0,4(0,7)	8,3-8,4	1,3- 1,9	
		with return th	ottle		* without retu	rn throttle

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

			Full-load s Setting po	int	Test spec	cifications (4)	idle spec	oint	ition Test spe	Torque control		
rev/min	travel			Central red travel mm	Central red travel mm	rev/min 6	rev/min 7	Control red travel rmm 8	rev/min 9	Control rod travel mm	rev/min 11	Control rod travel mm
-	-		-	-	12,9 6,1	750-755 780-790	-	_	-	-	-	-

Torque-control travel

Speed regulation: At

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

ult-foad delivery on overnor control lever est oil temp. 40°C (104°F)		Control rod stop 3a	Fuel deliv	ery characteristics		Starting fuel delivery Idle speed Control		
rev/min cm ³ /-1000 strokes		rev/min 3	rev/min	cm ³ /-1000 strokes	rev/min	nd trivil caਜੇ ³ /1000 strokes / mm 7		
(1 u.2) 700 142,0-144 (139,0-147	,0 ,0)	-	-	-	(1) 100 (2) 100	130,0-150,0 140,0-160,0 (136,0-164,0)		

Checking values in brackets

WPP 001/4 MB 14,6 b 5. Edition

PE 8 P 110 A 320 LS 3802

RQ 300/1150 PA 490 (1) ROV 300-1150 PA 524 (2) supersedes 8.80

company: Daimler-Benz

OM 422

184 Kw (250 Ps)

Komb.-Nr. 0 401 848 714

8 - 7 - 2 - 6 - 3 - 5 - 4 - 10 -45 -90 -135-180-225-270-315° $\stackrel{+}{=}$ 0,5° ($\stackrel{+}{=}$ 0,75°)

0 401 848 724

All test specifications are valid for 8osch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pymp Settings

Port closing at prestroke

"estoil-ISO 4113

4.00-4.10

min (from BDC) Zyl. 8

Rotational speed rev/min	Control rod travel mm	Fuel delivery cm ³ /100 strokes 11 1 11 3	Difference cm³/ 100 strokes	Control rod travel mm 2	Fuel delivery cm³/100 strokes "2" 3	Spring pre-tensioning (torque-control valve) mm 8		
1150	10,8-10,9	10,0 - 10,2	0,4(0,8)	11,2+0,1	10,2 - 10,4	n = 1150		
300	8,1-8,3	1,1-1,7	0,4(0,7)	8,2-8,3	1,2- 1,8	n = 300		
600	-	C, Sp. 4-5	0,6(1,0)					

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

RQ - 490

PRG che	ck Control rod travel	Full-load s Setting po rev/min 3		Test spec Central rad travel	rev/min	Idle spec Setting p rev/min 7	Control red travel		cifications (5) Control rod travel mm	rev/min	Control rod (3)
600	13,8-14,6	600	14,2		1195-1210 1125-1255	300	8,2	100 300	min.9,7 8,1-8,3	1150 600	10,8-10,9
1150 1350	0 - 1			4,0	1123-1233				460 = 2,0 0 - 1		10,0411,0
	Breakaway]	1 mm less control

Torque-control travel on flyweight assembly dimension a =

Speed regulation: At

rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

governor	delivery on control lever mp. 40°C (104°F)	Control rod stop 3a	Fuel deliv	ery characteristics (3b)	Starting fuel delivery ldle speed		
rey/min	cm³/-1000 strokes 2	rev/min 3	rev/min 4	cm³/~1000 strokes 5	rev/min 6	red travel cm ³ /1000 strokes:/ mm 7	
1150	100,0 - 102,0 (97,0 - 105,0)	600	600	85,0 - 89,0 (82,0 - 92,0)	100	130, 0-150, 0	

Checking values in brackets

				Intermediate	rated spe	ed	Lower rated	speed		Sliding sl	eeve trave!
Upper rated s Degree of deflection of control lever	rev/min Control rodtravel	Control rod travel mm rev/min	(9)	Degree of deflection of control lever		Control rod travel mm 4	Degree of deflection of control lever		Control rod travel	rev/min	mm 11
max.	1150	15,2-17	7,8	-	-	-	ca.18	100 300	min. 9,7 8,2-8,3	550 850	1,0-1,2 3,4-3,7 4,9-5,3
ca. 64		1190-420 1230-126 0 - 1	50				330-465 3a			1150	7,6

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-rod Test oil tem		Rotational-speed (2b) Ilmitation Intermediate speed	Fuel deliv high idle s	ery characteristics(5a) peed (5b)	Starting I Idle switchin	luel delivery 6 ig point 	travel	Control control roo
rev/min	,	rey/min 4a	rev/min	cm³/1000 strokes	rev/min	cm²/1000 strokes 7	rev/min 8	mm 9
1150	102,0-104,0		600	90,0 - 94,0 (87,0 - 97,0)	100	130,0-150,0	-	-
								wel than col

Checking values in brackets

Testoil-ISO 4113

* 1 mm less control rod travel than col. 2

B. Governor Settings

Upper rated :		Control and		Intermediate Degree of		ed Control rod	Lower rated	d spe n d	Control rod	Sliding s	eeve travel
Degree of deflection of control lever	Control rod travel	Control rod travel mm rev/min	(28)	deflection of control		mm 4	deflection of control lever	rev/min	mm 3	′ 1	
	2	3		4	5	6	7	8	9	10	11
<u>'</u>	+							}		Ì	l
}				1					ļ.	Ì	1
ļ				<u> </u>						1	
}					l		Ì			1	1
								1			Ì
					1		(3a)			1	
	1							┷			<u> </u>

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load d Control-ro Test oil ter	elivery d stop np. 40°C (104°F) 2	Rotational-speed 2b limitation intermediate speed		ery characteristics (58)	Starting Idle switchir	fuel delivery 6	(1949)	Control rod
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes 5	rev/min 6	7	rev/min 8	9
<u></u>				·				
								than col

Checking values in brackets

* 1 mm less control rod travel than col. 2

Festoil-ISO 4113

Test Specifications Fuel Injection Pumps 1 and Governors

WPP 001/4 MB 14.6c 5. Edition

PE 8 P 110 A 320 LS 3802

ROV 300-1150 PA 524-2 RQV 300-1150 PA 524-3 superseded .82

Komb.-Nr. 0 401 848 712

company:Daimler-Benz OM 422

1 - 8 - 7 - 2 - 6 - 3 - 5 - 4 je $45^{\circ \pm}0.5^{\circ}$ ($\pm 0.75^{\circ}$)

206 kW (280 PS)

See Service Information VDT-I-401/102

All test specifications are valid for Bosch Fuel injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings 4,0 -4,1

Port closing at prestroke

mm (from BDC) Zy1. 8; RW = 9,0-12,0 mm

Rotational speed rev/min	Control rod travel mm	Fuel delivery * cm³/100 strokes 3	Difference cm ³ / 100 strokes 4	Control roë travel mm 2	Fuel delivery * cm³/100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1150	12,3+0,1	12,2 - 12,4	0,4(0,8)	12,3+0,1	13,1-13,3	
300	8,1-8,3	1,3 - 1,9	0,4(0,7)	8,1-8,3	1,5- 2,1	
600	-	C, Sp. 4 u. 5	(0,9)	-	C, Sp. 4 u. 5	
	*with r	eturn throttle			* without retu	rn throttle

Adjust the fuel delivery from each outlet according to the values in [

B. Governor Settings

Upper rated s	peed		Intermediate	rated sp	eed	Lower rated	speed		Sliding •	ieeve travel
deflection	rev/min Control	Control rod ta	Degree of deflection of control		Control rod travel	Degree of deflection		Control rod travel	Jilowing a	0
1	rod travel mm	rev/min (28)	lever	rev/min	mm (4)	of control lever	rev/min	mm (3)	rev/min	mm
1	2	3	4	5	6	7	8	9	10	11
max.	1150	15,2-17,8	-	•	-	ca. 21	100	min.10,1	250	1,0-1,2
ca. 66	11,3	1190-1200					300	8,1-8,3		3,4-3,7
	4,0	1235-1265				330-465			850 1150	5,0-5,3 7,7
						3				

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-roo Test oil ten		Rotational-speed 20 timitation intermediate speed	Fuel delichigh idle :	very characteristics (5a) speed (5b)	Starting Idle awitchir	. •	Torque- traval	Control rod
rev/min	cm³/1000 strokes	rev/min 4a	rev/min	cm³/1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	travei mm
1	2	3	4	5	6	7	8	9
(1)		1190-1200*			100	130,0-150,0	-	-
1150	122,0-124,0	`	600	114,0-118,0				
l	(119,0-127,0)	Ì	(111,0-121,0)				
1	-							

Checking values in brackets

1 mm less control rod travel than col. 2

B. Governor Settings

Upper rated s	peed			Intermediate	rated spa	eed		Lower rated	speed		Sliding sl	eeve travel
Degree of deflection	rev/min	Control rod		Degree of deflection		Control rod		Degree of deflection		Control rod trave:	١,	①
of control	rodtravel		(2a)	of control lever	rev/min	mm	①	of control lever	ופא/שונו	mm 3	rev/min	നന
	2	3		4	5	6		7	8	9	10	
max.	1150		17,8	-	-	-		ca.21	100	min.10,	250	1,0-1,2
ca. 66	11,3							330-46	300	8,1-8,3	550 850 1150	3,4-3,7 5,0-5,3 7,7
	1							39			<u> </u>	L

Torque control travel a =

mm

C. Settings for Fuel Injection Pump with Fitted Governor

rev/min cm³/1000 strokes rev/min 3 rev/min cm³/1000 strokes rev/min 6 7 rev/min 8 (2) 1190-1200* 100 112,0-116,0 (128,5-135,5) (109,0-119,0)	Full-load de Control-rod Test oil tem	stop	Rotational speed (2b) Fuel delivery characteristics high idle speed (5b) intermediate speed		ery characteristics (5a) peed (5b)	Starting I Idle switchin	•	travei	Control roc
1150 131,0-133,0 600 112,0-116,0 (126,0-154,0)	rev/min	cm ³ /1000 strokes	rev/min 4a	rev/min	cm ³ /1000 strokes 5	١_	cm ² /1000 strokes 7	rev/min 8	travel mm
(120,32,33,3)		131,0-133,0 (128,5-135,5		600	112,0-116,0 (109,0-119,0		1		

Checking values in brackets

Testoil-ISO 4113

* 1 mm less control rod travel than col 2

B. Governor Settings

Upper rated	speed			Intermediate	rated spe	ed	Lower rated	speed		Sticking st	eeve travel
Degree of deflection		Control rod travel	(19)	Degree of deflection	l	Control rod travel	Degree of deflection of control	1	Control rod travel		0
of control lever	mm lavel	mm rev/min	(2a)	of controi lever	rev/min	mm 🕢	lever	rev/min	mm 3	rev/min	ww.
١.	2	3		4	5	6	7	8	9	10	
				·							
							39				

Torque control travel a =

mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-rod Test oil tem	elivery I stop ip, 40°C (104°F) 2	Rotational-speed (2b) limitation intermediate speed (4a)	Fuel deliv high idle s	ery characteristics (Sa)	Starting Idle switchin		Torque- travel	Control Control rod
rev/mm	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	,	rev/min	ww
,	2	3	4	5	6	7	8	9
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Checking values in brackets

424

* 1 mm less control rod travel than col. 2

Test Specifications Fuel Injection Pumps 2 and Governors

40

WPP 001/4 MB 14,6e1
1. Edition

En

PE 8 P 110 A 320 LS 38u2-1

RQ 300/1150 PA 187-11

supersedes

W 1 N. 0 204 040 754

company: Daimler-Benz

Komb.-Nr. 0 401 848 751

1 - 8 - 7 - 2 - 6 - 3 - 5 - 4 je $45^{\circ} \pm 0.5^{\circ}$ ($\pm 0.75^{\circ}$)

OM 422 286 kW

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing al. prestroke

(3.95-4.15)

mm (from BDC/Zy1. 8; RW = 9,0-12,0 mm

Rotation#! speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fual delivery cm ³ /160 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1150	12,3+0,1	13,1-13,3	0,4(0,75)			
300	8,5-8,7	1,5- 2,1	0,45(0,75)		
600	-	C, Sp. 4 u. 5	(0,9)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Checkin PRG che	(' /	Full-load s	-			Idle speed regulation Setting point Test specifications (5)						
rev/min	Control rod travel mm 2	rev/min 3	Control rad travel mm 4	Control red travel rnm 5	rev/min		Control red travel rn.m 8	rev/min 9	Control rod travel mm	rev/min	travel	
650	13,0-14,0	650	13,5	11,3 4,0 1350		l	8,6	300	min. 10,0 8,5-8,7 70 = 2,0 max. 1,8	-	-	
Torque-c	ontrol travel		-	•			1	195-12	210 min		1 mm less contro	

Torque-control travel on flyweight assembly dimension a =

mm

Speed regulation: At

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load di governor d Test oil ten		Control rod stop 3a	Fuel delive	ory characteristics 3b	Starting fuel delivery Idle speed Contra		
rev/min	cm ³ /~1000 strakes 2	rev∤min 3	rev/min 4	cm ³ /-1000 strokes 5	rev/min 6	nd travel cm³/1000 strokes: √mm 7	
1150	131,0-133,0 (128,5-135,5)	600	600	110,0-114,0 (107,0-117,0)	100	130,0-150,0 (126,0-154,0)	

Checking values in brackets

9.83

BOSCH

Test Specifications Fuel Injection Pumps 2 and Governors

40

WPP 061/4 FIA 17,2 b
1. Edition

En

PE 8 P 120 A 920/5 LS 3804 RQ 300/950 PA 474 1 - 8 - 4 - 3 - 6 - 5 - 7 - 2 je 45 + 0,5 (+0,75°)

supersedes - Fiat

engine: 8280.22.007

Values only apply to test nozzle-and-holder assembly 1 688 901 019 and fuel-injection test tubing 1 680 750 067.

Komb.-Nr. 0 401 848 726

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

(3,45-3,65)

mm (from BQC)

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strakes 4	Control rod travei mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
950	11,1+0,1	18,5-18,7	0,5(0,9)			
300	4,9-5,1	1,3-1,9	0,8(1,2)			

Adjust the let delivery from each outlet according to the values in

B. Governor Settings

PRG chec		Full-load s Setting po			cifications (4)	ldle sp ec Setting p	oint Central		cifications 5	Torque o	control Control rod I travel
rev/min	travel mm	rev/min 3	nd travel mm 4	nd travel mm 5	rev/min 6	rev/min 7	red travel mm 8	rev/min 9	travel mm 10	rev/min 11	mm 12
600 VH	19,2-20,8 = max 46	600	20,0	10,1 4,0 1150	995 1010 1030-1060 0 - 1,0	300	5,0	100 300 350-	min.7,5 4,9-5,1 390= 2,0	950 600	11,1-11,2 11,1-11,3
	L	J		<u></u>	<u> </u>			995-1	010 min '		1 mm less contro

Torque-control travel on flyweight assembly dimension a

Speed regulation: At

mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load di governor d Test oil ten	elivery on control lever np. 40°C (104°F)	Control rod stop 3a	Fuel delive	ery characteristics (3b)	Starting for special s	d Centre
rev/min	cm ³ /-1000 strokes	rev/min 3	rev/min 4	cm ³ /-1000 strokes 5	6	cm ³ /1000 strokes/ mm 7
LDA 950	0,7 bar 185,0-187,0 (182,0-190,0)	-	950	0 bar 138,0-140,0 (135,0-143,0)	100	210,0-230,0 (206,0-234,0)

Checking values in brackets

9.83

BÒSCH

Geschaftsbereich KH. Kundendienst. Kfz-Ausrüstung.

O 1980 by Robert Bosch GmbH, Postfach 50, D-7000 Stuttgart 1. Printed in the Federal Republic of Germany Imprimé en République Fédérale d'Allemagne par Robert Bosch GmbH.

D. Adjustment Test for Manifold Pressure Compensator

FIA 17,2 b - 2 -

Testatn =

500 rev/min decreasing pressure - in bar gauge pressure

Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1) .
PE 8 P LS 3804	0,70		11,1 - 11,2
+ RQPA 474		0	8,3 - 8,4
		0,36	10,4 - 10,5
		0,29	8,8 - 9,2

Notes

(1) when n =

rev/min and gauge pressure =

bar (= maximum full-load control rod travel)

①

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 MB 14,6c1
1. Edition

En

PE 8 P 110 A 320 LS 3802-1

ROV 300-1150 PA 524-9

supersedes

Komb.-Nr. 0 401 848 752

 $1 - 8 - 7 - 2 - \varepsilon - 3 - 5 - 4$ je $45^{\circ} \stackrel{+}{=} 0,5^{\circ} (\stackrel{+}{=} 0,75^{\circ})$

companyDaimler-Benz engine: OM 422 206 kW

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Rotational speed rev/min	Control rud travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm³/ 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1150	12,3+0,1	13,1-13,3	0,4(0,75)			
300 600	8,0-8,2 -	1,5- 2,1 C, Sp. 4 u. 5	0,45(0,75 (0,9)	1		

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated s	peed			Intermediate	rated spi	eed		Lower rated	speed			Sliding s	iseve travel
deflection	rev/min Control	Control rod travel	(b)	Degree of deflection		Control re travel	bd	Degree of deflection		Control i	bor		. ①
	rod travel mm	ten/wju ww	20	of control lever	rev/min	mm	4	of control lever	rev/min	mm	3	rev/min	mm
1	2	3		4	5	6		7	8	9		10	11
max.	1150	15,2-17	7,8	-	-	-		ca. 21	100	min.	9,7	250	1,0-1,2
ca. 66	11,3 4.0	1190-120 1235-120	00 65						300	8,0-8	,2		3,4-3,7 4,9-5,3
	1,0					1 - - -		330-465 ③				1150	7,6

Torque control travel a = - mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-roc Test oil terr		Rotational-speed 250 timitation intermediate speed	Fuel delivery characteristics (5a) Shigh idle speed (5b)			fuel delivery . 6	i orque- travel	control (5)
rev/min 1	cm ³ /1000 strokes 2	rev/min 49	rev/min	cm ³ /1000 strokes 5	rev/min	cm³/1000 strokes 7	rev/min 8	travel mm
1150	131,0-133,0 (128,5-135,5		600	110,0-114,0 (107,0-117,0)	100	130,0-150,0 (126,0-154,0		

Checking values in brackets

* 1 mm less control rod travel than col. 2

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 FIA 17,2 b 1 1. Edition

En

PE 8 P 120 A 920/5 LS 3804 RQV 300-950 PA 475 R 1 - 8 - 4 - 3 - 6 - 5 - 7 - 2 je 45 + 0,5 (+ 0,75°)

supermedes company: Fiat 8280.22

Values only apply to test nozzle-and-holder assembly 1 688 901 019 and fuel-injection test tubing 1 680 750 067.

280 kW ...mb.-Nr. 0 401 848 730

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

3,5 - 3,6
Port closing at prestroke (3,45-3,65) mm (from BDC)

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
950	11,1+0,1	18,5-18,7	0,5(0,9)		,	
300	4,9-5,1	1,3-1,9	0,8(1,2)			
950	8,3-8,4	C,Sp. 4 u. 5	(1,2)			
]]	•		1		
	1				<u> </u>	

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated s	peed		Intermedia	te rated sp	eed	Lower rated	speed	•	Sliding s	leeve travel
deflection	rev/min Control	- C	Degree of deflection		Control rod travel	Degree of deflection		Control rod travel		0
	rodtravel mm	mm rev/min (2	of control	rev/min	mm ④	of control lever	tev/min	mm 3	rev/min	mm
jı	2	3	14	5	6	7	8	9	10	11
max.	950	15,2-17,	8 -	-	-	ca. 11			250	1,0-1,3
ca. 64	10,1 4,0 1250	990-1000 1075-1105 0 - 1,0				300-390	300	5,9-6,1	1	3,7-4,2 5,6-5,9 7,7
						3a				

Torque control travel a = mn

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load d Control-ro Test oil ter		Rotational-speed 20 limitation intermediate speed			Starting Idle switchir		Torque- travel	Control rod
rev/min	cm³/1000 strokes	rev/min 40	rev/min	cm ³ /1000 strokes	rev/min	cm³/1000 strokes	rev/min	travel mm
ĺ,	2	3	4 .	5	6	7	8	9
LDA 950	0,7 bar 185,0-187,0 (182,0-190,0		LDA 950	0 bar 138,0-140,0 (135,0-143,0		210,0-230,0 (206,0-234,0		-

Checking values in brackets

* 1 mm less control rod travel then col. 2

9.83

Testoil-ISO 4113

D. Adjustment Test for Manifold Pressure Compensator

FIA 17,2 b 1 -2-

Testat n =

500 rev/min decreasing pressure - in bar gauge pressure

Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1) .
PE 8 PLS 3804	0,70		11,1 - 11,2
+ RQVPA 475 R		0	8,3 - 8,4
		0,36	10,4 - 10,5
		0,29	8,8 - 9,2
	•		
	<u> </u>		

Notes

(1) when n =

rev/min and gauge pressure =

bar (= maximum full-load control rod travel)

Testoil-ISO 4113

Test Specifications Fuel Injection Pumps 2 and Governors

WPP 001/4 MB 11,0 c 1 4. Edition

PE 6 P 110 A 320 LS 3805

RQ 300/1150 PA 187-6

supersedes 11.82

Komb.-Nr. 0 401 846 749

company: Daimler-Benz

1 - 6 - 3 - 5 - 2 - 4

engine: OM 421

 $0 - 75 - 120 - 195 - 240 - 315^{\circ} + 0,5^{\circ} (+ 0,75^{\circ})$

159 kW (216 PS)

See Service Information VDT-I-401/102

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

mm (from BDCZy1. 6; RW = 9.0 - 12.0 mm

Rotational speed rev/min	Control rod travel • mm	Fuel delivery # cm³/100 strokes 3	Difference cm³/ 100 strokes 4	Control rod travel mm 2		Spring pre-tensioning (torque-control valve) mm 6
1150	12,5+0,1	12,8-13,0	0,4(0,8)	12,5+0,1	13,4-13,6	
300	8,3-8,5	1,2-1,8	0,4(0,7)	8,3-8,5	1,2-1,8	
600	-	C, Sp. 4 u. 5	(0,9)	-	C, Sp. 4 u. 5	
	,	*with return t	hrottle		* without retur	n throttle

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Checkin		Full-load s	•	•	cifications (4)	Idle spec	-		cifications (5)	Torque o	\sim
rev/min	Control rod		Control red travel mm	Central red travel mm	rev/min		Control red travel rnm 8	i i	Control rod	rev/min 11	Control rod travel mm
650	13,2-14,0	650	13,6	11,5 4,0 1350	1195-1210 1240-1270 0 - 1,0	ì	8,4	100 300 430-	min.10,0 8,3-8,5 470 =2,0		-

Torque-control travel
on flyweight assembly dimension a =

Speed regulation: At

1195-1210 min

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

	elivery on ontrol lever ap. 40°C (104°F)	Control rod stop 3a	Fuel deliv	ery characteristics 3b	Starting fuel delivery Idle speed Control		
rev/min 1	cm ³ /-1000 strokes 2	rev/min 3	rev/min 4	cm ³ /-1000 strokes	rev/min 6	mal travel cm ³ /1000 strokes:// mm 7	
(1) 1150	128,0-130,0 (125,0-133,0)	600	600	120,0-124,0 (117,0-127,0)	100	130,0-150,0 (126,0-154,0)	

Checking values in brackets

PRG che	ck Control rod travel	Full-load s Setting po rev/min 3	•	Test spec Control rod travel	rev/min	Idle spee Setting p rev/min 7	Control rad travel	Test spe	cifications 5 Control rod travel mm	rev/min	Control rod (3)
650	13,2-14,0	650	13,6		1195-1210 1240-1270 0 - 1,0	300	8,4	100 300 430-4	min.10,0 8,3-8,5 70 = 2,0	-	-

Torque-control travel on flyweight assembly dimension a =

mm

1195-1210 min⁻¹ Speed regulation At

t mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery on governor control lever rest oil temp. 40°C (104°F)		Control rod stop 3a	Fuel deliv	ery characteristics	Starting for Idle spee	d Centres	
rev/min 1	cm ³ /-1000 strokes	rev/min	rev/min	cm³/-1000 strokes	rev/min	red travel cm ³ /1000 strokes / mm 7	
(2) 1150	134,0-136,0 (131,5-138,5)	600	600	116,0-120,0 (113,0-123,0)	100	130,0-150,0 (126,0-154,0)	

Checking values in brackets

Testoil-ISO 4113

B. Governor Settings

PRG che	ck Control rod travel	Full-load s Setting po rev/min	-	Test spec Control red travel mm	rev/min	Idle spee Setting p	Control rod travel	Test spe	cifications 5 Control rod travel mm	rev/min	Control rod travel
1	2	3	4	5	6	 	8	9	10		
								<u> </u>			
										<u> </u>	

Torque-control travel on flyweight assembly dimension a =

mm

Speed regulation At

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

governor	delivery on control lever mp 40°C (104°F)	Control rod stop 3a	Fuel delivery characteristics			Starting for Idle spee	uel delivery d Gentre
rev/min	cm³/-1000 strokes	rev/min	rev/min	cm ³ /-1000 strokes		rev/min 6	red travel cm ³ /1000 strokes / mm 7
				·			

Testoil-ISO 4113

Test Specifications Fuel Injection Pumps 2 and Governors

WPP 001/4 MB 14,6h2 2. Edition

RO 900 PA 310 R PE 8 P 120 A 320 LS 3807 Komb.-Nr. 0 401 848 743

supersedes 3.81

1 - 8 - 7 - 2 - 6 - 3 - 5 - 4 je $45^{\circ} \pm 0.5^{\circ} (\pm 0.75^{\circ})$

company: Daimler-Benz OM 422 A

Values only apply to test nozzle-and-holder assembly 1 688 901 019 and fuel-injection test tubing 1 680 750 067.
All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers 229 kW

A. Fuel Injection Pump Settings

mm (from BDC)Zy1. 8

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
850	12,0+0,	1 17,9-18,1	0,5(0,9)			
300	4,8-5,	0 1,2- 2,0	0,8(1,2)			·

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Checking of PRG check						Idle spec	koint		cifications 5	Torque control Control rod		
Con trav mm		rev/min	Control red travel rnm	Control red travel rnm	rev/min 6	rev/min 7	Control red travel rom 8	1 .	travel mm	rev/min 11	travel	
-	-	-	-	11,0	900-905 945-955	-	-	-	-	-	-	

Torque-control travel on flyweight assembly dimension a =

Speed regulation: All

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de governor co Test oil tem		Control rod stop 3a	Fuel delive	ery characteristics	3	Starting fuel delivery Idle speed Control red trave		
rev/min	cm ³ /-1000 strokes	rev/min	rev/min 4	cm³/-1000 strokes 5		rev/min 6	cm³/1000 strokes / mm	
850	179,0 - 181,0 (176,0 - 184,0)	•	••	-		100	160,0 - 180,0 (156,0 - 184,0)	

Checking values in brackets

Test Specifications Fuel Injection Pumps 2 and Governors

40

WPP 001/4 MB 14,6h 2. Edition

<u>En</u>

PE 8 P 120 A 320 LS 3807 RQ 1050 PA 310 Komb.-Nr. 0 401 848 742 1-8-7-2-6-3-5-4 je 45° $^{+}$ 0,5° ($^{+}$ 0,75°)

supersede3.81
Daimler-Benz
company OM 422 A

engine: 228 kW (310 PS)

Values only apply to test nozzle-and-holder assembly 1 688 901 019 and fuel-injection test tubing 1 680 750 067.

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump, Settings

Port closing at prestroke

(3.95-4.15)

mm (from BDQZy1. 8

Rotational speed	Control rod travel	Fuel delivery cm ³ /100 strokes 3	Difference cm³/ 100 strokes 4	Control rod travel mm 2	Fuel delivery cm³/100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1000	11,3+0,1	17,3 - 17,5	0,5(0,9)			
300	4,8-5,0	1,2 - 2,0	0,8(1,2)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

travel red travel red travel rev/min r	Checking PAG che	of slider ck Control rod	①	Full-load s Setting po	int		cifications (\ '	eed regul point Control		cifications 5	Torque	Control rod
		travel		l _	red travel	red travel	rev/min 6	rev/m 7	ս լաա	rev/min		1.7.	
	•	-		_	-	1		i		-	-	-	-

Torque-control travel on flyweight assembly dimension a =

шп

Speed regulation: At

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load d governor d Test oil ter	lelivery on control lever mp. 40°C (104°F)	Control rod stop 3a	Fuel delive	ery characteristics	Sta Idle	Starting fuel delivery Idle speed		
rev/min	cm ³ /-1000 strokes	rev/min 3	rev/min	cm ³ /-1000 strokes 5	1 8 7	rud tradi /min cm³/1000 strokes:/ mm 7		
1000	173,0 - 175,0 (170,0 - 178,0)	•		-	10	180,0 - 200,6 (176,0 - 204,0)		

Checking values in brackets

9.83

BOSCH

Test Specifications Fuel Injection Pumps 2 and Governors

WPP 001/4 MB 14,6h3 2. Edition

PE 8 P 120 A 320 LS 3807

RO 750 PA 374 R

superaedes 10.82 Daimler-Benz

Komb.-Nr. 0 401 848 741

 $\frac{1}{1-8-7-2-6-3-5-4}$ je $45^{\circ} \stackrel{+}{=} 0,5^{\circ} (\stackrel{+}{=} 0,75^{\circ})$

OM 422 A 196 kW (266 PS)

Values only apply to test nozzle-and-holder assembly 1 688 901 019 and fuel-injection test

tubing 1 680 750 067.
All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

(3.95-4.15)

mm (from BDCZV]. 8: RW = 9.0-12.0 mm

Rotational speed rev/min	Control rod travel	Fuel delivery cm ³ /100 strokes	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
700	12,1+0,1	18,4 - 18,6	0,5(0,9)		,	
300	4,8-5,0	1,2 - 2,0	0,8(1,2)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Checking PRG che	g of slider ck	1	Full-load s		Test spec		idle spec Setting p	oint		cifications (5)	Torqu a c	control Control rod
rev/min	Control rod travel mm		rev/min	Control red travel rnm 4	Control red travel mm 5	rev/min	rev/min	Control red travel mm 8	rev/min 9	Control rod travel mm	rev/min 11	travel
-	-		-	-	11,1 4,0	750-755 785-795	-	-	-	-	-	-
	a a trait traval							75	0-755	min -1		1 mm less contro

Torque-control travel on flyweight assembly dimension a =

Speed regulation: At

1 mm less control

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de governor co Test oil terr		Control rod stop 3a	Fuel delive	ery characteristics 3b	Starting for	Control	
rev/min	cm³/-1000 strokes	rev/min 3	rev/min 4	cm³/-1000 strokes 5	rev/min	red travel cm ³ /1000 strokes:// mm 7	
700	184,0 - 186,0 (181,0 - 189,0)	-	-	-	100	180,0-200,0 (176,0-204,0)	

Checking values in brackets

9.83

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Test Specifications 2

Fuel Injection Pumps 2 WPP 001/4 MB 14,6 g 1 and Governors

5. Edition

PE 8 P 120 A 320 LS 3807 Komb.-Nr. 0 401 848 747

RQ 300/1150 PA 511-2

supersedes 1.83

Daimler-Benz OM 422 LA

276 kW (375 PS)

1 - 8 - 7 - 2 - 6 - 3 - 5 - 4 je $45^{\circ} \pm 0,5^{\circ} (\pm 0,75^{\circ})$

Values only applx to test nozzle-and-holder assembly 1 688 901 019 and fuel-injection test tubing 1 680 750 067 All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

(3.95-4.15)

mm (from BDC)

Cy1.8

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm³/ 100 strokes 4	Control rod travel mm 2	Fuel delivory cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
900	11,6+0,1	18,9 - 19,1	0,5(0,9)			
300 1150 600 500	1	1,2 - 2,0 C, Col.1+2 C, Col.4+5	0,8(1,2) 0,75 0,75			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

PRG che	g of slider colt Control rod travel mm 2	Full-load s Setting po rev/min 3	•	Test spec Control rod travel	cifications 4	Idle spec Setting p rev/min 7	Control rod travel	Test spe	cifications 5 Control rod travel mm	rev/min	Control rod (3
600 VH-	19,1-20,8 max. 46°	600	19,9	10,6	1195-1210 1250-1280		,3	100 300 335-	min. 6,0 4,2 -4,4 875=2,0	-	-

Torque-control travel on flyweight assembly dimension a =

Speed regulation: At

1195-1210 min-1

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

	elivery on ontrol lever pp. 40°C (104°F)	Control rod stop [3a] Fuel delivery characteristics			Starting for	ruel delivery ed Gontre		
rev/min	cm³/-1000 strokes	rev/min	rev/min	cm ³ /-1000 strokes	rev/min 6	cm ³ /1000 strokes / mm		
LDA 900 LDA 1150	0,7 bar 199,0 - 191,0 (186,0 - 194,0) 0,7 bar 185,0 - 189,0 (182,0 - 192,0)	-	LDA 600 LDA 500	0,7 bar 182,0 - 186,0 (179,0 - 189,0) 0 bar 139,0 - 141,0 (136,0 - 144,0)	100	140,0 - 160,0 (136,0-164,0)		

Checking values in brackets

D. Adjustment Test for Manifold Pressure Compensator

MB 14,6 g1

- 2 -

Test at n =

500

rev/min decreasing pressure - in bar gauge pressure

Pump/gagernor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1) .
PE 8 PLS 3807	0,44		11,1 - 11,3
+ RQPA 511-2		0,70	11,6 - 11,7
		0 '	10,1 - 10,2
		0,34	10,3 - 10,4
		-	
•			

Notes

(1) when n =

rev/min and gauge pressure =

bar (= maximum full-load control rod travel)

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 MB 14,6 1 1 3.Edition

En

PE8P12OA320LS3807 RuV 300-1150PA526-2 1-8-7-2-6-3-5-4 je 45° ± 0,5° (± 0,75°)

Values only apply to test nozzle-and-holder assembly 1 688 901 019 and fuel-injection test tubing 1 680 750 067.

supersedpt 83companyDaimler-Benz engine: OM 422 LA 276 kW (375PS) Komb.-Nr. O 401 848 748

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke (3.95-4.15) mm (from BDC)

0110000119 21 21 20 20 20 20		3.95-4.131				
Rotational speed	Control rod travel	Fuel delivery	Difference cm ³ /	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm	cm ³ /100 strokes	100 strokes	mm	c 3/100 strokes	mm
1	2	3	4	2	3	6
900	11,6+0,1	18,9-19,1	0,5(0,9)			
300	4,8-5,0	1,2- 2,0	0,8(1,2)			
1150	-	C,Sp. 1 u. 2	0.75			
600 500	-	C, Sp.4 u. 5	0,75			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated s	peed		Intermediate	rated sp	eed	Lower rated	speed		Stiding s	leeve travel
Degree of deflection of control lever	rev/min Control rod travel mm 2	Control rod travel mm rev/min 2a	Degree of deflection of control lever	rev/min 5	Control rod travel mm 4	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 3	rev/min 10	mm 11
max.	1150	15,2-17,8	-	-	•	ca.10		min.6,0 4,2-4,4	250 1 550 3	,0-1,2 ,4-3,7
ca.65	10,6 4,0 1350	1190-1200 1230-1260 0- 1,0				320-465			850 4 150	,9-5,3 7,6
	330				<u> </u>	39				

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load of Control-ro Test oil ter		Rotational-speed 2b limitation intermediate speed			Starting Idle switchir	. •	Torque-	Control cod
rev/min	cm³/1000 strokes	rev/min 4e	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm³/1000 strokes 7	rev/min 8	mm 9
LDA 900 LDA 1150	0,7 bar 189,0-191,0 (186,0-194,0) 0,7 bar 185,0-189,0 (182,0-192,0)		DA 500 DA 500	0,7 bar 182,0-186,0 (179,0-189,0) 0 bar 139,0-141,0 (136,0-144,0)	(140,0-160,0 136,0 - 164,0)	-	-

Checking values in brackets

* 1 mm less control rod travel than col. 2

9.83

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BOSCH

Festoil-ISO 4113

D. Adjustment Test for Manifold Pressure Compensator

MB 14,6 1 1 - 2

Test at n =

500

rev/min decreasing pressure - in bar gauge pressure

Setting	Measurement	diminution Control rod travel- difference
Gauge pressure = ba	r Gauge pressure = Dar	mm (1) .
0,44	0,70 0 0,34	11,1-11,3 11,6-11,7 10,1-10,2 10,3-10,4
	Gauge pressure = ba	Gauge pressure = bar Gauge pressure = bar 0,44 0,70 0 0,34

Notes

(1) when n =

rev/min and gauge pressure = bar (= maximum full-load control rod travel)

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 MB 14,6 K

supersed 9.82

3. Edition

PE 8 P 120 A 320 LS 3807

RQV 300-1150 PA 545

1-8-7-2-6-3-5-4

Testoil-ISO 4113

je 45 ° ±0,5° (±0,75°)

Values only apply to test nozzle-and-holder assembly 1 688 901 019 and fuel-injection test tubing 1 680 750 067.

companDaimler-Benz engine. 0M 422 A engine. 243 kW (330PS) Komb.-Nr. 0 401 848 732

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Rotational speed	Control rod travel	3,95-4,15) Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min 1	mm 2	cm³/100 strokes 3	cm³/ 100 strokes 4	mm 2	cm ³ /100 strokes 3	mm 6
1150	0,7+0,1	15,7-15,9	0,5(0,9)			
300	5,2-5,4	1,2-1,8	0,8(1,2)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated s	peed		Intermedial	e rated sp	eed	Lower rated	speed	•	Sliding s	lesve travel
deflection	Control rod travel	TANO!	Degree of deflection of control		Control rod travel	Degree of deflection of control	rev/min	Control rod travel	rev/min	(1)
lever 1	mm 2	rev/min (2	lever 4	rev/min 5	mm (4)	lever 7	8	9	10	11
max.	1150	15,2-17,	8 -	-	-	ca.11	100	min.6,0	250	1,0-1,2
			-				300	4,5-4,7		3,4-3,8
ca. 64	9,7 4,0 1350	1190-120 1225-125 0 - 1	5			325-460			850 1150	1,9-5,4 7,7
	1330		Ĭ			39				

Torque control travel a =

mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-rod Test oil terr		Rotational-speed 20 limitation intermediate speed	· -1		Starting idle switchir		Torque- travel	Control (5)
rev/min cm³/1000 strokes		rev/min 40	rev/min	cm³/1000 strokes	rev/min	rev/min cm³/1000 strokes		ww
1	2	3	4	5	6	7	8	9
LDA 1150 LDA 600			LDA 900 LDA 500	164,0-168,0 (161,0-171,0		120,0-140,0 (116,0-144 ₉ 0	600	10,7+0, 11,4+0, 10,8+0,

Checking values in brackets

* 1 mm less control rod travel than col. 2

9.83

BOSC

D. Adjustment Test for Manifold Pressure Compensator

rev/min decreasing pressure - in bar gauge pressure Test at n = 500

300			
Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1) .
PE8PLS3807 mitPA 545	0,47	0,70 0 0,40	11,2-11,3 11,4-11,5 10,5-10,6 10,6-10,7

Notes:

(1) when n =

rev/min and gauge pressure =

bar (= maximum full-load control rod travel)

Test Specifications Fuel Injection Pumps (1A) and Governors

WPP 001/4 MB 14,6 p 1. Edition

PE 8 P 120 A 320 LS 3816

RSV 650-1150 P0/823

supersedes =

1 - 8 - 7 - 2 - 6 - 3 - 5 - 4 je $45^{\circ} \stackrel{+}{-}0,5^{\circ}$ ($\stackrel{+}{-}0,75^{\circ}$)

Daimler-Benz OM 422 A

Values only apply to test nozzle-and-holder

206 kW

assembly 1 688 901 019 and fuel-injection test

Komb.-Nr. 0 401 878703

tubing 1 680 750 067
All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

4,0-4,1

mm (from BDCZy1. 8

Port closing at prestroke

Testoil-ISO 4113

(3.95-4.15)Spring pre-tensioning Fuel delivery Difference Control rod Fuel delivery Control rod (torque-control valve) Rotational travel speed cm³/100 strokes mm 100 strokes mm 2 cm³/100 strokes rev/min 6 0.5(0.9)14,1-14,3 9,5-9,6 1130 0,8 (1,2) 1,6-2,2 3,5-3,7 650

Adjust the fuel delivery from each outlet according to the values in [

B. Governor Settings

Uppe Degree of deflection of control lever	r rated speed Control rod travel mm		Interme	diate rated	speed	Control- lever deflection in degrees 7	Low-	Control rod travel mm	11 3 1	rque control Control rod travel mm
loose	800 x =	0,3-1,0	-	-	-	-	650	3.6	1150 700 1050	9,5-9,6 10,0-10,2 9,6- 9,8
ca. 40	8,5 4,0 1400	1160-1170 1185-1200 0,3-1,7								

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

(2b) Fu	H-load stop	6 Rotational- speed limitat		uel delivery naracteristics	Starting f	uel delivery 5	(4a) Idl	e stop ¡Cantrol rod
Test oil temp. 40°C (104°F) rev/min cm³/1000 strokes 1 2		Note. changed to) rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min	cm ³ /1000 strokes 7	rev/min 8	travel mm 9
1130	141,0-143,0 (138,0-146,0)	1160-1170*	900	152,0-158,0 (149,0-161,0)	100	140,0-160 (136,0-164	,0 - ,0)	-

Checking values in brackets

* 1 mm less control rod travel than col 2

7.83

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WPP 001/4 MB 18,3 c 2. Edition

<u>En</u>

PE 10 P 110 A 320 LS 3818

RQ 300/1150 PA 437-2

1 - 8 - 7 - 6 - 3 - 5 - 2 - 10 - 9 - 4 $0 -27 -72 -99 -144 - 171 - 216 - 243 - 288 - 315° - 0,5° (<math>^{+}$ 0,75°) superseda, 32 companyDaimler-Benz

engine: OM 423

261 kW (355 PS)

Komb.-Nr. 0 401 849 705

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection, Pump Settings

Port closing at prestroke

(3.95-4.15)

mm (from BDCZy1. 10; RW=9.0 - 12.0 mm

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travei mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm
1150	12,1+0,1	12,6 - 12,8	0,4 (0,8)			_
300	8,5-8,7	1,2 - 2,0	0,4 (0,7)			
600 900	••	C, Sp. 4 u.5	(0,9)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

PRG che	Control rod	Full-load s Setting po rev/min 3	•	Test spec Control red travel		Idle spec Setting p rev/min 7	coint Control red travel		cifications 5 Control rod travel mm	rev/min	Control rod (3)
600	13,0-14,0	600	13,5	11,1 4,0 1350	1190-1205 1225-1255 0 - 1,5	300	6,1	300	min.7,7 6,0-6,2 40 = 2,0	600	12,1+0,1 12,5+0,1 12,4+0,2

Torque-control travel on flyweight assembly dimension a

0,2 mm

Speed regulation: Al 190 - 1205 min-1

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

	elivery on control lever np. 40°C (104°F)	Control rod stop 3a	Fuel delive	ery characteristics 3b	Starting fuel delivery Idle speed		
rev/min	cm ³ /-1000 strokes	rev/min 3	rev/min	cm ³ /-1000 strokes 5	rev/min 6	net tradi cm ³ /1000 strokes / mm 7	
1150	126,0-128,0 (123,0-131,0)	-	900	114,0-118,0 (111,0-121,0) 120,0-125,0 (117,0-128,0)	100	140,0-160,0 (136,0-164,0)	

Checking values in brackets

9.83

BOSCH

Test Specifications Fuel Injection Pumps 1 and Governors

WPP 001/4 MB 18,3 d 1 2. Edition

PE 10 P 110 A 320 LS 3818-1

RQV 350-1150 PA 678

supersedes 3.83 Daimler-Benz company:

1 - 8 - 7 - 6 - 3 - 5 - 2 - 10 - 9 - 4

OM 423

261 kW (355 PS)

0 - 27 - 72 - 99 - 144 - 171 - 216 - 243 - 288 - 315° ± 0,5° (± 0,75°)

Komb.-Nr. 0 401 849 709

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

mm (from BDC) Zyl. 10 Port closing at prestroke (3.95-4.15)

Rotational speed rev/min	Control rod travel mm 2		Difference cm ² / 100 strokes 4	Control rod travel mm	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1150	11 ,5+0 ,1	12,2-12,4	0,4(0,8)			
350	7,9-8,1	1,4-2,2	0,4(0,7)			
600 900	-	C, Sp. 4 u.5	(0,9)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Testoil-ISÖ 4113

Upper rated s	peed		Intermediate	rated sp	eed	Lower rated	peed	•	Sliding s	laeve trav6l
deflection		Control rod travel mm rev/min 2	of control	rev/min	Control rod travel mm 4	Degree of deflection of control lever 7	rev/min	Control rod travel mm 3	rev/min	mm 11
max.	1200	15,2-17,8	-	-	-	ca.18	100	min.10,0		1,2-1,4
ca. 62	10,5 4,0 1400	1190-1200 1250-1280 0-1,0				330-500		7 , 9-8,1		3,6-3,9 5,2-5,6 7,8
						3a				

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-roe Test oil ten	d stop np. 40°C (104°F) 2	Imitation Intermediate speed	Fuel delivery characteristics (5a high idle speed (5b)		idle switchir	g point	travel	Control 5
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm²/1000 strokes	e Lea/wiu	cm ³ /1000 strokes	rev/ភាin B	. 9
1150	122,0-124,0 (119,0-127,0)	1190-1200*	600	112,0-116,0 (109,0-119,0)	100	130,0-150,0	600	11,5+0, 12,1+0, 11,8+0,
1150	92,0-94,0 (89,0-97,0) **		900	[113,0-118,0 (110,0-121,0)				, , , ,

Chucking values in brackets

* 1 mm less control rod fravel than col. 2

^{**} Adjusted at the inner lever of the reduced-delivery stop

WPP 001/4 MB 21,9 a 1 2. Edition

PE 12 P 120 A 320 LS 3819

RQ 900 PA 634

Daimler-Benz

1 - 5 - 9 - 8 - 3 - 4 - 11 - 10 - 2 - 6 - 7 - 12

company: 0M 424 A

0 -15 -60 -75 -120-135-180-195-240-255-300-315° ± 0,5°(± 0,75m)

374 kW

Values only apply to test nozzle-and-holder assembly 1 688 901 019 and fuel-injection test

Komb.-Nr. 0 401 840 704

tub ing 1 680 750 067 bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

Testoil-ISO 4113

(3.95-4.15)

mm (from BDC) Zyl. 12

Rotational speed	travel	Fuel delivery cm ³ /100 strokes	cm³/ 100 strokes	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
850	11,8+0,	18.3-18,5	0,5 (0,8			
300	4,8-5,0	1,2-2,0	0,8 (1,2			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

PRG she		_	Full-load s	int	Test spec		idle spec Setting p			cifications 5	Torque	Control rod
	Control rod travel mm 2		rev/min	control red travel mm	Central ned travel (nem 5	rev/min 6	rev/min 7	levert ben	rev/min 9	travel	rev/min	travel mm 12
-	-		-	-	10,8 4,0 1050	932-942	-	-	-		-	-
L							<u>.</u>	<u></u>	900	- 905 min	1	1 mm less contro

Torque-control travel on flyweight assembly dimension a =

Speed regulation At

rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full-foad delivery on governor control lever Test oil temp. 40°C (104°F)		Control rod stop 3a	Fuel delive	3	Starting fuel delivery idle speed		
rev/min	cm ³ /-1000 strokes	rev/min	rev/min 4	cm ³ /-1000 strokes 5		rev/min	cm³/1000 strokes/ mm 7
850	183,0-185,0 (180,0-188,0)	-	-	-		100	160,0-180,0 (156,0-184,0)
1			<u> </u>	<u> </u>		<u> </u>	9 .83

Checking values in brackets

②

Test	Specifications
Fuel	Injection Pumps 2
and	Governors

WPP 00 1/4 MB 21,9a

4. Edition

RQ 750 PA 635

5:83-

supersedes Daimler-Benz

company: OM 424 A

1- 5- 9- 8- 3- 4- 11- 10- 2- 6- 7- 12 0-15-60-75-120-135-180-195-240-255-300-315° -0,5° (-0,75°) engine:

330 kW (449 PS)

Generator

Values only apply to test nozzle-and-holder assembly 1 688 901 019 and fuel-injection test

Komb.-Nr. 0 401 840 705

tubing 1 680 750 067.
All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers.

A. Fuel Injection Pump, Settings

PE 12 P 120 A 320 LS 3819

mm (from BDC) Zy1 。 12 (3,95-4,15)

Rotational speed	Control rod	Fuel delivery	Difference cm ³ /	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm	cm³/100 strokes	100 strokes	mm	cm ³ /100 strokes	mm
1	2	3	4	2	3	6
700	11,9+0	1 19,3 - 19,5	0,5(0,8)			\Box
300	4,8-5	0 1,4 - 2,0	0,8(1,2)			
	İ					
					}	
	1	1	į.	1		-

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Checking PRG che	of slider	Full-load :			cifications (4)	Idle spec	•		cifications (5)	Torque o		(3)
	Control rod	rev/min	Control red travel rmm	Central red travel m.m. 5	l (1)		Control red travel mm 8	rev/min 9	Control rod travel	rev/min 11	Control rod travei	<u>ري</u>
-	•	-	-	10,5 4,0 900	750-755 780-790 0 - 1,0	-	-	-	•	•	-	
								750	-755 min	1		

Torque-control travel on flyweight assembly dimension a =

Speed regulation: At

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

1 2	1000 strokes	rev/min	!		1	
70d 19		3	rev/min 4	cm³/-1000 strokes 5	R	Control of Control of
	3,0 - 195,0 0,0 - 198,0)			•	100	'160,0 -180,0 (156,0-184,0)

Checking values in brackets